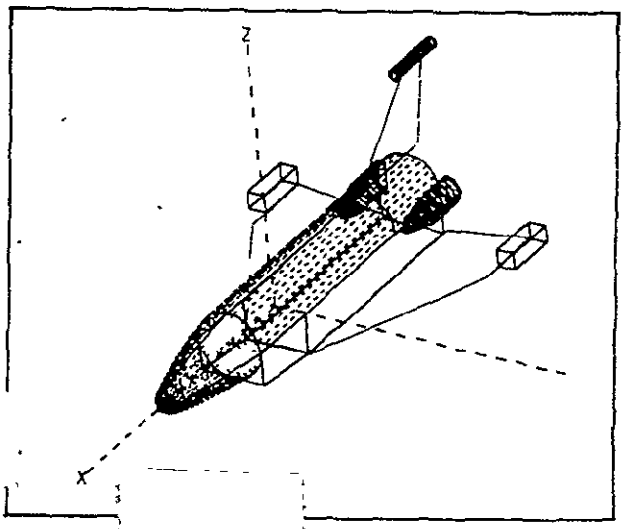
Contract NAS9-14318

NASA CR-151825

User's Manual
Appendix H UNIVAC EXEC 8 EDITION
Sample Problems

JUNE 1978

Thermal Radiation Analysis System TRASYS II



MARTIN MARIETTA

455

APPENDIX H

Sample problems run on the NASA/JSC Univac 1110, Exec 8 system.

This entire section has been changed for Revision 1.

CONTENTS

SAMPLE CASE 1

SAMPLE CASE 1

```
-SED,R VOGTB.CASE1
FILE IN FIELD 1 DISABLED--ACCEPTED
FILE IN FIELD 1 IN USE BY ANOTHER RUN
READ-ONLY MODE
CASE UPPER ASSUMED
ED 14.02-06/22-20:26-(0,)
EDIT
      1:$RUN,R/R RVMH01,3240-F261-C,ES3-N03711,07,150                NO DECK VOGT
     10:$ADD ES3-TRASYS*TRASYS.STARTH
     11:$SETC 0100
     12:$ADD PREPRO
     13:HEADER OPTIONS DATA
     14:TITLE  SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/OBCAL/RKCAL - ORIGINAL RUN
     15:       MODEL        = SAMPLE
     16:       RSO          = RSTSAM1
     17:HEADER SURFACE DATA
     18:C
     19:C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5
     20:C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT
     21:C-----CASES.
     22:C
     23:BCS    BOXINR
     24:S      SURFN        = 1
     25:       TYPE         = RECT
     26:       ACTIVE       = BOTTOM
     27:       PROP         = 0.9,0.9
     28:       P1           = 1.0, 0.0, 1.0
     29:       P2           = 1.0, 0.0, 0.0
     30:       P3           = 1.0, 1.0, 0.0
     31:       COM          = * INNER RIGHT FRONT *
     32:S      SURFN        = 2
     33:       TYPE         = RECT
     34:       ACTIVE       = BOTTOM
     35:       PROP         = 0.9,0.9
     36:       P1           = 1.0, 1.0, 1.0
     37:       P2           = 1.0, 1.0, 0.0
     38:       P3           = 0.0, 1.0, 0.0
     39:       COM          = * INNER RIGHT SIDE *
     40:S      SURFN        = 3
     41:       TYPE         = RECT
     42:       ACTIVE       = TOP
     43:       PROP         = 0.9,0.9
     44:       P1           = 0.0, 0.0, 1.0
     45:       P2           = 0.0, 0.0, 0.0
     46:       P3           = 0.0, 1.0, 0.0
     47:       COM          = * INNER RIGHT BACK *
     48:S      SURFN        = 4
     49:       TYPE         = RECT
     50:       ACTIVE       = TOP
     51:       PROP         = 0.9,0.9
     52:       P1           = 1.0, 1.0, 0.0
     53:       COM          = * INNER RIGHT BOTTOM *
     54:BCS    BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000
     55:C
     56:C-----THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000
     57:C-----TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX WAS INPUT IN
     58:C-----THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW
```

```
 59:C-----THE USE OF 'MESS' AND 'ERN' NODES.
 60:C
 61:R       REFNO       = 1000
 62:        P1          = 1.0, 0.0, 1.0
 63:        P2          = 1.0, 0.0, 0.0
 64:        P3          = 0.0, 0.0, 0.0
 65:        COM         = ' IMAGING PLANE '
 66:BCS     LIDINR
 67:S       SURFN       = 5
 68:        TYPE        = RECT
 69:        ACTIVE      = BOTTOM
 70:        PROP        = 0.9,0.9
 71:        P1          = 1.0, 1.0, 0.0
 72:        COM         = ' INNER RIGHT LID '
 73:S       SURFN       = 15
 74:        IMAGSF      = 5
 75:        IREFSF      = 1000
 76:        COM         = ' INNER LEFT LID '
 77:BCS     BOXOUT
 78:S       SURFN       = 21
 79:        TYPE        = BOXS
 80:        ACTIVE      = OUT
 81:        SHADE       = NO
 82:        PROP        = 0.2,0.9
 83:        P1          = 1.01,-1.01, 1.01
 84:        P2          = 1.01, 1.01, 1.01
 85:        P3          =-0.01, 1.01, 1.01
 86:        P4          =-0.01, 1.01,-0.01
 87:        COM         = ' OUTER SURFACES '
 88:BCS     LIDOUT
 89:S       SURFN       = 28
 90:        TYPE        = RECT
 91:        ACTIVE      = TOP
 92:        SHADE       = NO
 93:        PROP        = 0.2,0.9
 94:        P1          = 1.01,-1.01, 0.01
 95:        P2          = 1.01, 1.01, 0.01
 96:        P3          =-0.01, 1.01, 0.01
 97:        COM         = ' OUTER SURFACE OF LID '
 98:C
 99:C-----THE NEXT TWO BCS'S (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE
100:C-----CASE 4 ONLY.
101:C
102:BCS     MESSR
103:S       SURFN       = 101
104:        TYPE        = RECT
105:        ACTIVE      = TOP
106:        PROP        = 1.0,1.0
107:        P1          = 1.0, 0.0, 1.0
108:        P2          = 1.0, 0.0, 0.0
109:        P3          = 0.0, 0.0, 0.0
110:        COM         = ' PRIMARY MESS NODE, RIGHT SIDE '
111:BCS     MESSL
112:S       SURFN       = 111
113:        TYPE        = RECT
114:        ACTIVE      = BOTTOM
115:        PROP        = 1.0,1.0
```

```
116:        P1          = 1.0, 0.0, 1.0
117:        P2          = 1.0, 0.0, 0.0
118:        P3          = 0.0, 0.0, 0.0
119:        COM         = ' PRIMARY MESS NODE, LEFT SIDE '
120:C
121:C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.
122:C
123:BCS     LIDSP
124:S       SURFN       = 200
125:        TYPE        = RECT
126:        ACTIVE      = BOTTOM
127:        PROP        = 0.1,0.1
128:        SPRI        = 0.8
129:        SPRS        = 0.8
130:        P1          = 1.0,-1.0, 0.0
131:        P2          = 1.0, 1.0, 0.0
132:        P3          = 0.0, 1.0, 0.0
133:        COM         = ' SPECULAR LID '
134:HEADER BCS DATA
135:BCS     BOXINR
136:BCS     BOXINL
137:BCS     LIDINR ,0.,0.,1.,0.,-45.,0.
138:BCS     BOXOUT
139:BCS     LIDOUT .0.,0.,1.,0.,-45.,0.
140:BCS     MESSR
141:BCS     MESSL
142:BCS     LIDSP  .0.,0.,1.,0.,-45.,0.
143:HEADER FORM FACTOR DATA
144:C
145:C-----ENTER KNOWN ZERO FORM FACTORS AND EQUIVALENT FORM FACTORS FOR
146:C-----CASE1.
147:C
148:FIG     CASE1
149:NODEA   1,2,3,4,11,12,13,14,5,15,21,22,23,24,25,26,END
150:BOTH    21,ZERO
151:        22,ZERO
152:        23,ZERO
153:        24,ZERO
154:        25,ZERO
155:        26,ZERO
156:        1,1,0.
157:        11,12,1,2
158:        11,13,1,3
159:        11,14,1,4
160:        11,15,1,5
161:        1,11,0.
162:        11,2,1,12
163:        11,3,1,13
164:        11,4,1,14
165:        11,5,1,15
166:        2,2,0.
167:        2,3,1,2
168:        2,4,1,4
169:        12,13,2,3
170:        12,14,2,4
171:        12,15,2,5
172:        12,3,2,13
```

```
173:        12,4,2,14
174:        12,5,2,15
175:        3,3,0.
176:        3,4,1,4
177:        13,14,3,4
178:        13,15,3,5
179:        3,13,0.
180:        13,4,3,14
181:        13,5,3,15
182:        4,4,0.
183:        14,15,4,5
184:        4,14,0.
185:        14,5,4,15
186:        5,5,0.
187:        5,15,0.
188:HEADER CORRESPONDENCE DATA
189:C
190:C-----ENTER CORRESPONDENCE DATA FOR CASE 2
191:C
192:FIG     CASE2
193:        1           = 1,11,22
194:        2           = 2,25
195:        3           = 3,13,24
196:        4           = 4,14,21
197:        5           = 5,15,26
198:        12          = 12,23
199:C
200:C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS
201:C
202:FIG     CASE3,FF
203:        1           = 1,11,22
204:        2           = 2,25
205:        3           = 3,13,24
206:        4           = 4,14,21
207:        5           = 5,15,26
208:        12          = 12,23
209:HEADER OPERATIONS DATA
210:C
211:C-----BUILD THE CASE 1 CONFIGURATION
212:C
213:BUILD   CASE1,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT
214:C
215:C-----PLOT THE CASE 1 CONFIGURATION INDICATING THE ACTIVE
216:C-----SIDES OF THE NODES.
217:C
218:        CALL NDATAS(0,0,0,YES,0)
219:L       NPLOT
220:C
221:C-----CALCULATE SHADOW FACTOR TABLES FOR SUBSEQUENT USE
222:C-----SAMPLE CASE 2 IN THE CALCULATION OF DIRECT FLUXES.
223:C
224:L       SFCAL
225:C
226:C-----CALCULATE THE FORM FACTOR MATRIX.
227:C
228:L       FFCAL
229:C
```

```
    230:C-----CALCULATE THE GRAY BODY MATRIX.
    231:C
    232:       CALL GRDATA(BOTH,0,FF)
    233:L      GRCAL
    234:C
    235:C-----CALCULATE AND PUNCH RADIATION CONDUCTORS.
    236:C
    237:       CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)
    238:L      RKCAL
    239:END OF DATA
    240:$PND,$LEP
    241:$ASG,T/S RSO..QC,RSO,Q2,RSO APPENDIX H, CASE 1.
    242:$ADD PROCSS
    250:$FIN
NO CORRECTIONS APPLIED.


$FREE TPFS.


$ASG,T TPFS..F4/0/TRK/400
```

```
@ED ES3-TRASYS*TRASYS.PREPROH,TPF$.PREPRO
CASE UPPER ASSUMED
ED 14.02-06/22-20:26-(0.)
EDIT
LINES:57 FIELDATA
```

```
@ED ES3-TRASYS*TRASYS.PROCSSN.TPFS.PROCSS
CASE UPPER ASSUMED
ED 14.02-06/22-20:26-(1,)
EDIT
LINES:103 FIELDATA


@SETC 0100


@SETC.I


@ASG,AQ ES3-TRASYS*LIBRYN.
FAC WARNING        040200004000


@ASG,T 1.,F4/0/TRK/600


@ASG,T 2.,F4/0/TRK/600


@ASG,T 3.,F4/0/TRK/600


@ASG,T DIR.,F17/0/POS/5


@ASG,T FFR.,F17/0/POS/9


@ASG,T GBIRR.,F17/0/POS/5


@ASG,T RIO.,F17/0/POS/9


@ASG,T SQNTL.,F17/0/TRK/10


@ASG,T PLSR.,F17/0/TRK/320
```

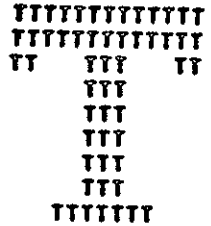
```
@ASG,T TQR.,F17/0/TRK/320

@USE 8,RIO

@USE 14,RSI

@USE 16,SQNTL

@USE 21,FFR

@USE 22,DIR

@USE 23,GBIRR

@USE 25,PLSR

@USE 26,TQR

@XQT ES3-TRASYS*LIBRYN.CHECK

@TEST TNE/1/53

@JUMP L1
INTERVENING STATEMENTS SKIPPED

@L1:ASG,T RIO2.,F17/0/POS/9

@ASG,T RIO5.,F17/0/POS/20
```

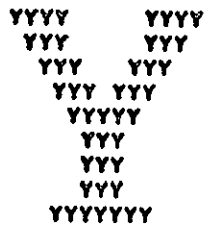
```
@ASG,T DATAI.,F17/0/POS/9

@ASG,T CMPL.,F17/0/TRK/20

@ASG,T INFO

@ASG,T MAP.

@ASG,T MASS,F17/0/POS/20

@TEST TE/1/S6

@JUMP L15
INTERVENING STATEMENTS SKIPPED

@L15:FREE 14

@USE 4,DATAI

@USE 9,RIOS

@USE 10,RIO2

@USE 11,INFO

@USE 12,CMERG

@USE 13,EMERG
```

```
@USE 14,MASS1

@USE 15,MASS

@USE 20,CMPL

@USE 27,MAP

@ASG,AQ ES3-TRASYS*COMPLRN.
FAC WARNING          040200004000
```

```
@DATA,I INFO.
DATA T7 RL70-5 06/22-20:26:21
END DATA.  IMAGE COUNT: 20


@XQT ES3-TRASYS*COMPLRN.ABS
```

NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
UNIVAC 1110/EXEC 8





TRASYS II

PRE-PROCESSOR EXECUTION

VERSION.MODIFICATION ... UC2E3
MODIFICATION DATE 052878

DATE OF RUN 062278
TIME OF RUN 202623
JOB NUMBER RVNH01

MODEL = N/A
OPTION AND TITLE DATA BLOCKS

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT             HEADER OPTIONS DATA
INPUT             TITLE  SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
INPUT                    MODEL        = SAMPLE
INPUT                    RSO          = RSTSAM1
```

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
TRASYS INFORMATION TO USER

```
**********************************************************
*                                                        *
*    A T T E N T I O N   T R A S Y S   U S E R S         *
*                                                        *
**********************************************************
```

THIS SECTION OF THE TRASYS PRINTOUT WAS DEVISED TO INFORM THE TRASYS USERS OF THE STATUS OF THE TRASYS PROGRAM WITHOUT HAVING TO PRINTOUT ALL THE STATUS INFORMATION ON EVERY RUN. TO OBTAIN ADDITIONAL INFORMATION ON HOW TO USE THIS SECTION OF THE TRASYS PRINTOUT, PLACE A (INFO=INFO) IN THE OPTIONS DATA BLOCK.

FOR TRASYS ASSISTANCE AND/OR POSSIBLE TRASYS PROGRAM PROBLEMS, PLEASE CONTACT BOB VOGT AT JSC-2326.

NEWRL 08/29/77 DOCUMENTATION ADDITION

THE TRASYS -N- VERSION HAS BEEN UPDATED TO THE UC2E2 AND UL2E4 LEVEL.
SEE LATEST USERS MANUAL FOR INFORMATION ON USER-CALLED SUBROUTINE ARGUMENT CHANGES AND NEW CAPABILITIES.

END OF TRASYS INFORMATION FILE

++NOTE++ DATA ORIGINATION FROM INPUT FILE, NO -RSI- SOURCE EDITING

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
MODEL HISTORY

MODEL NAME ..... SAMPLE

MODEL TITLE ..... SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN

MOD LABEL	RUN JOB NUMBER	RUN DATA	RUN TIME	RSI TAPE	RSO TAPE	RTI TAPE	RTO TAPE	CMERG TAPE	EMERG TAPE	BCDOU TAPE	TRAJ TAPE	USER1 TAPE	USER2 TAPE
AA	RVMH01	062278	202625		RSTSAM								

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SOURCE DATA EDIT DIRECTIVES

CARD ORGIN 12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SURFACE DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
INPUT           HEADER SURFACE DATA                                                                    1                AA
INPUT           C                                                                                      2                AA
INPUT           C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5                       3                AA
INPUT           C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT                     4                AA
INPUT           C-----CASES.                                                                           5                AA
INPUT           C                                                                                      6                AA
INPUT           BCS    BOXINR                                                                          7                AA
INPUT           S      SURFN      = 1                                                                  8                AA
INPUT                  TYPE       = RECT                                                               9                AA
INPUT                  ACTIVE     = BOTTOM                                                            10                AA
INPUT                  PROP       = 0.9,0.9                                                           11                AA
INPUT                  P1         = 1.0, 0.0, 1.0                                                     12                AA
INPUT                  P2         = 1.0, 0.0, 0.0                                                     13                AA
INPUT                  P3         = 1.0, 1.0, 0.0                                                     14                AA
INPUT                  COM        = * INNER RIGHT FRONT *                                             15                AA
INPUT           S      SURFN      = 2                                                                 16                AA
INPUT                  TYPE       = RECT                                                              17                AA
INPUT                  ACTIVE     = BOTTOM                                                            18                AA
INPUT                  PROP       = 0.9,0.9                                                           19                AA
INPUT                  P1         = 1.0, 1.0, 1.0                                                     20                AA
INPUT                  P2         = 1.0, 1.0, 0.0                                                     21                AA
INPUT                  P3         = 0.0, 1.0, 0.0                                                     22                AA
INPUT                  COM        = * INNER RIGHT SIDE *                                              23                AA
INPUT           S      SURFN      = 3                                                                 24                AA
INPUT                  TYPE       = RECT                                                              25                AA
INPUT                  ACTIVE     = TOP                                                               26                AA
INPUT                  PROP       = 0.9,0.9                                                           27                AA
INPUT                  P1         = 0.0, 0.0, 1.0                                                     28                AA
INPUT                  P2         = 0.0, 0.0, 0.0                                                     29                AA
INPUT                  P3         = 0.0, 1.0, 0.0                                                     30                AA
INPUT                  COM        = * INNER RIGHT BACK *                                              31                AA
INPUT           S      SURFN      = 4                                                                 32                AA
INPUT                  TYPE       = RECT                                                              33                AA
INPUT                  ACTIVE     = TOP                                                               34                AA
INPUT                  PROP       = 0.9,0.9                                                           35                AA
INPUT                  P1         = 1.0, 1.0, 0.0                                                     36                AA
INPUT                  COM        = * INNER RIGHT BOTTOM *                                            37                AA
INPUT           BCS    BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000                                       38                AA
INPUT           C                                                                                      39                AA
INPUT           C-----THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000                      40                AA
INPUT           C-----TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX WAS INPUT IN                       41                AA
INPUT           C-----THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW                      42                AA
INPUT           C-----THE USE OF 'MESS' AND 'ERN' NODES.                                               43                AA
INPUT           C                                                                                      44                AA
```

IMAGING SURFACE (1) BCS (BOXINR), GENERATING SURFACE (11) BCS (BOXINL)
IMAGING SURFACE (2) BCS (BOXINR), GENERAT'NG SURFACE (12) BCS (BOXINL)
IMAGING SURFACE (3) BCS (BOXINR), GENERATING SURFACE (13) BCS (BOXINL)

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SURFACE DATA INPUT BLOCK

```
CARD ORIGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

                 IMAGING SURFACE (    4) BCS (BOXINR), GENERATING SURFACE (   14) BCS (BOXINL)
INPUT            R      REFNO       = 1000                                                        45              AA
INPUT                   P1          = 1.0, 0.0, 1.0                                               46              AA
INPUT                   P2          = 1.0, 0.0, 0.0                                               47              AA
INPUT                   P3          = 0.0, 0.0, 0.0                                               48              AA
INPUT                   COM         = * IMAGING PLANE *                                           49              AA
INPUT            BCS    LIDINR                                                                    50              AA
INPUT            S      SURFN       = 5                                                           51              AA
INPUT                   TYPE        = RECT                                                        52              AA
INPUT                   ACTIVE      = BOTTOM                                                      53              AA
INPUT                   PROP        = 0.9,0.9                                                     54              AA
INPUT                   P1          = 1.0, 1.0, 0.0                                               55              AA
INPUT                   COM         = * INNER RIGHT LID *                                         56              AA
INPUT            S      SURFN       = 15                                                          57              AA
INPUT                   IMAGSF      = 5                                                           58              AA
INPUT                   IREFSF      = 1000                                                        59              AA
INPUT                   COM         = * INNER LEFT LID *                                          60              AA
INPUT            BCS    BOXOUT                                                                    61              AA
INPUT            S      SURFN       = 21                                                          62              AA
INPUT                   TYPE        = BOX5                                                        63              AA
INPUT                   ACTIVE      = OUT                                                         64              AA
INPUT                   SHADE       = NO                                                          65              AA
INPUT                   PROP        = 0.2,0.9                                                     66              AA
INPUT                   P1          = 1.01,-1.01, 1.01                                            67              AA
INPUT                   P2          = 1.01, 1.01, 1.01                                            68              AA
INPUT                   P3          =-0.01, 1.01, 1.01                                            69              AA
INPUT                   P4          =-0.01, 1.01,-0.01                                            70              AA
INPUT                   COM         = * OUTER SURFACES *                                          71              AA
INPUT            BCS    LIDOUT                                                                    72              AA
INPUT            S      SURFN       = 26                                                          73              AA
INPUT                   TYPE        = RECT                                                        74              AA
INPUT                   ACTIVE      = TOP                                                         75              AA
INPUT                   SHADE       = NO                                                          76              AA
INPUT                   PROP        = 0.2,0.9                                                     77              AA
INPUT                   P1          = 1.01,-1.01, 0.01                                            78              AA
INPUT                   P2          = 1.01, 1.01, 0.01                                            79              AA
INPUT                   P3          =-0.01, 1.01, 0.01                                            80              AA
INPUT                   COM         = * OUTER SURFACE OF LID *                                    81              AA
INPUT            C                                                                                82              AA
INPUT            C-----THE NEXT TWO BCS'S (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE              83              AA
INPUT            C-----CASE 4 ONLY.                                                               84              AA
INPUT            C                                                                                85              AA
INPUT            BCS    MESSR                                                                     86              AA
INPUT            S      SURFN       = 101                                                         87              AA
INPUT                   TYPE        = RECT                                                        88              AA
INPUT                   ACTIVE      = TOP                                                         89              AA
INPUT                   PROP        = 1.0,1.0                                                     90              AA
```

MODEL = SAMPLE
SURFACE DATA INPUT BLOCK

SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GSCAL/RKCAL - ORIGINAL RUN

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
INPUT                    P1          = 1.0, 0.0, 1.0                                                 91              AA
INPUT                    P2          = 1.0, 0.0, 0.0                                                 92              AA
INPUT                    P3          = 0.0, 0.0, 0.0                                                 93              AA
INPUT                    COM         = * PRIMARY MESS NODE, RIGHT SIDE *                             94              AA
INPUT           BCS      MESSL                                                                       95              AA
INPUT           S        SURFN       = 111                                                           96              AA
INPUT                    TYPE        = RECT                                                          97              AA
INPUT                    ACTIVE      = BOTTOM                                                        98              AA
INPUT                    PROP        = 1.0,1.0                                                       99              AA
INPUT                    P1          = 1.0, 0.0, 1.0                                                 100             AA
INPUT                    P2          = 1.0, 0.0, 0.0                                                 101             AA
INPUT                    P3          = 0.0, 0.0, 0.0                                                 102             AA
INPUT                    COM         = * PRIMARY MESS NODE, LEFT SIDE *                              103             AA
INPUT           C                                                                                    104             AA
INPUT           C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.                  105             AA
INPUT           C                                                                                    106             AA
INPUT           BCS      LIDSP                                                                       107             AA
INPUT           S        SURFN       = 200                                                           108             AA
INPUT                    TYPE        = RECT                                                          109             AA
INPUT                    ACTIVE      = BOTTOM                                                        110             AA
INPUT                    PROP        = 0.1,0.1                                                       111             AA
INPUT                    SPRI        = 0.8                                                           112             AA
INPUT                    SPRS        = 0.8                                                           113             AA
INPUT                    P1          = 1.0,-1.0, 0.0                                                 114             AA
INPUT                    P2          = 1.0, 1.0, 0.0                                                 115             AA
INPUT                    P3          = 0.0, 1.0, 0.0                                                 116             AA
INPUT                    COM         = * SPECULAR LID *                                              117             AA
```

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
BCS DATA INPUT BLOCK

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL

INPUT             HEADER BCS DATA                                                                  118                 AA
INPUT             BCS    BOXINR                                                                    119                 AA
INPUT             BCS    BOXINL                                                                    120                 AA
INPUT             BCS    LIDINR ,0..0.,1..0..-45..0.                                               121                 AA
INPUT             BCS    BOXOUT                                                                    122                 AA
INPUT             BCS    LIDOUT ,0..0.,1..0..-45..0.                                               123                 AA
INPUT             BCS    HESSR                                                                     124                 AA
INPUT             BCS    HESSL                                                                     125                 AA
INPUT             BCS    LIDSP  ,0..0.,1..0..-45..0.                                               126                 AA
```

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
INPUT           HEADER FORM FACTOR DATA                                                                  127              AA
INPUT           C                                                                                        128              AA
INPUT           C-----ENTER KNOWN ZERO FORM FACTORS AND EQUIVALENT FORM FACTORS FOR                       129              AA
INPUT           C-----CASE1.                                                                             130              AA
INPUT           C                                                                                        131              AA
INPUT           FIG    CASE1                                                                             132              AA
INPUT           NODEA  1,2,3,4,11,12,13,14,5,15,21,22,23,24,25,26,END                                    133              AA
INPUT           BOTH   21,ZERO                                                                           134              AA
INPUT                  22,ZERO                                                                           135              AA
INPUT                  23,ZERO                                                                           136              AA
INPUT                  24,ZERO                                                                           137              AA
INPUT                  25,ZERO                                                                           138              AA
INPUT                  26,ZERO                                                                           139              AA
INPUT                  1,1,0.                                                                            140              AA
INPUT                  11,12,1,2                                                                         141              AA
INPUT                  11,13,1,3                                                                         142              AA
INPUT                  11,14,1,4                                                                         143              AA
INPUT                  11,15,1,5                                                                         144              AA
INPUT                  1,11,0.                                                                           145              AA
INPUT                  11,2,1,12                                                                         146              AA
INPUT                  11,3,1,13                                                                         147              AA
INPUT                  11,4,1,14                                                                         148              AA
INPUT                  11,5,1,15                                                                         149              AA
INPUT                  2,2,0.                                                                            150              AA
INPUT                  2,3,1,2                                                                           151              AA
INPUT                  2,4,1,4                                                                           152              AA
INPUT                  12,13,2,3                                                                         153              AA
INPUT                  12,14,2,4                                                                         154              AA
INPUT                  12,15,2,5                                                                         155              AA
INPUT                  12,3,2,13                                                                         156              AA
INPUT                  12,4,2,14                                                                         157              AA
INPUT                  12,5,2,15                                                                         158              AA
INPUT                  3,3,0.                                                                            159              AA
INPUT                  3,4,1,4                                                                           160              AA
INPUT                  13,14,3,4                                                                         161              AA
INPUT                  13,15,3,5                                                                         162              AA
INPUT                  3,13,0.                                                                           163              AA
INPUT                  13,4,3,14                                                                         164              AA
INPUT                  13,5,3,15                                                                         165              AA
INPUT                  4,4,0.                                                                            166              AA
INPUT                  14,15,4,5                                                                         167              AA
INPUT                  4,14,0.                                                                           168              AA
INPUT                  14,5,4,15                                                                         169              AA
INPUT                  5,5,0.                                                                            170              AA
INPUT                  5,15,0.                                                                           171              AA
```

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/OBCAL/RKCAL - ORIGINAL RUN
CORRESPONDENCE DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
INPUT           HEADER CORRESPONDENCE DATA                                                        172                 AA
INPUT           C                                                                                 173                 AA
INPUT           C-----ENTER CORRESPONDENCE DATA FOR CASE 2                                        174                 AA
INPUT           C                                                                                 175                 AA
INPUT           FIG    CASE2                                                                      176                 AA
INPUT                  1          = 1,11,22                                                      177                 AA
INPUT                  2          = 2,25                                                         178                 AA
INPUT                  3          = 3,13,24                                                      179                 AA
INPUT                  4          = 4,14,21                                                      180                 AA
INPUT                  5          = 5,15,28                                                      181                 AA
INPUT                  12         = 12,23                                                        182                 AA
INPUT           C                                                                                 183                 AA
INPUT           C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS                184                 AA
INPUT           C                                                                                 185                 AA
INPUT           FIG    CASE3,FF                                                                   186                 AA
INPUT                  1          = 1,11,22                                                      187                 AA
INPUT                  2          = 2,25                                                         188                 AA
INPUT                  3          = 3,13,24                                                      189                 AA
INPUT                  4          = 4,14,21                                                      190                 AA
INPUT                  5          = 5,15,28                                                      191                 AA
INPUT                  12         = 12,23                                                        192                 AA
```

MODEL = SAMPLE SAMPLE CASE 1 - RPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
OPERATION DATA INPUT BLOCK (PASS 1)

CARD ORGIN	12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8	EDIT NO.	OLD EDIT NO.	LABEL
INPUT	HEADER OPERATIONS DATA	193		AA

++++++ OPERATIONS DATA BLOCK (PASS 1) COMPLETE ++++++

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
OPERATION DATA INPUT BLOCK (PASS 2)

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
INPUT           C                                                                                    194                 AA
INPUT           C-----BUILD THE CASE 1 CONFIGURATION                                                 195                 AA
INPUT           C                                                                                    196                 AA
PROG            STEP     -1                                                                            0
INPUT           BUILD  CASE1,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT                                      197                 AA
PROG                   CALL BUILDC (BOXINR,6HCASE1 )                                                 0
PROG                   CALL ADD (BOXINL)                                                             0
PROG                   CALL ADD (LIDINR)                                                             0
PROG                   CALL ADD (BOXOUT)                                                             0
PROG                   CALL ADD (LIDOUT)                                                             0
INPUT           C                                                                                    198                 AA
INPUT           C-----PLOT THE CASE 1 CONFIGURATION INDICATING THE ACTIVE                            199                 AA
INPUT           C-----SIDES OF THE NODES.                                                            200                 AA
INPUT           C                                                                                    201                 AA
INPUT                  CALL NDATAS(0,0,0,YES,0)                                                      202                 AA
INPUT           L      NPLOT                                                                         203                 AA
INPUT           C                                                                                    204                 AA
INPUT           C-----CALCULATE SHADOW FACTOR TABLES FOR SUBSEQUENT USE                              205                 AA
INPUT           C-----SAMPLE CASE 2 IN THE CALCULATION OF DIRECT FLUXES.                             206                 AA
INPUT           C                                                                                    207                 AA
INPUT           L      SFCAL                                                                         208                 AA
INPUT           C                                                                                    209                 AA
INPUT           C-----CALCULATE THE FORM FACTOR MATRIX.                                              210                 AA
INPUT           C                                                                                    211                 AA
INPUT           L      FFCAL                                                                         212                 AA
INPUT           C                                                                                    213                 AA
INPUT           C-----CALCULATE THE GRAY BODY MATRIX.                                                214                 AA
INPUT           C                                                                                    215                 AA
INPUT                  CALL GBDATA(BOTH,0,FF)                                                        216                 AA
INPUT           L      GBCAL                                                                         217                 AA
INPUT           C                                                                                    218                 AA
INPUT           C-----CALCULATE AND PUNCH RADIATION CONDUCTORS.                                      219                 AA
INPUT           C                                                                                    220                 AA
INPUT                  CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)                                        221                 AA
INPUT           L      RKCAL                                                                         222                 AA
INPUT         END OF DATA                                                                            223                 AA
```

MODEL = SAMPLE SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
PROCESSOR CORE ALLOCATION

THE FOLLOWING IS THE PROCESSOR CORE ALLOCATION FOR THOSE SEGMENTS WHICH WILL BE LOADED IN THIS EXECUTION (APPROX.) ...

	OCTAL/DECIMAL
TRASYS (0) SEGMENT	121204/ 41604
OPERATIONS DATA (NOT KNOWN AT THIS TIME)	175000/ 64000
INITALIZATION SEGMENT	122300/ 42176
FORM FACTOR SEGMENT	136100/ 48192
SHADOW FACTOR SEGMENT	136000/ 48128
NODE PLOTTER SEGMENT	123600/ 42880
GRAY BODY SEGMENT	124000/ 43008
RADATION CONDUCTOR SEGMENT	125500/ 43840
GRAY BODY DYNAMIC COMMON	000276/ 190
RADIATION CONDUCTOR DYNAMIC COMMON	000574/ 380
GRAY BODY MINIMUM - MAXIMUM CORE	123557/ 42863 - 123707/ 42951
RADIATION CONDUCTOR MINIMUM - MAXIMUM CORE	125212/ 43658 - 125456/ 43822
MINIMUM CORE NEEDED FOR PROCESSOR EXECUTION	136100/ 48192
MAXIMUM CORE NEEDED FOR PROCESSOR EXECUTION	136100/ 48192
AMOUNT OF CORE THAT WILL BE USED BY PROCESSSOR	136100/ 48192

MODEL = SAMPLE SAMPLE CASE 1 - MPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
WRAP UP OF THE PRE-PROCESSOR

PRE-PROCESSOR ACCOUNTING INFORMATION	CP-SEC	DYN-STORAGE
SOURCE EDITING	1.262	676
DOCUMENTATION DATA PRE-PROCESSING	.000	0
QUANTITIES DATA PRE-PROCESSING	.037	266
ARRAY DATA PRE-PROCESSING	.000	0
SURFACE DATA PRE-PROCESSING (PASS 1)	1.416	64
SURFACE DATA PRE-PROCESSING (PASS 2)	.612	1141
BCS DATA PRE-PROCESSING	.214	186
FORM FACTOR DATA PRE-PROCESSING	.827	1169
SHADOW DATA PRE-PROCESSING	.000	0
FLUX DATA PRE-PROCESSING	.000	0
CORRESPONDENCE DATA PRE-PROCESSING	.223	101
OPERATIONS DATA PRE-PROCESSING	1.736	872
SUBROUTINE DATA PRE-PROCESSING	.209	0
SEQENTIAL TAPE INITIALIZATION	.022	0

TOTAL CP TIME FOR PRE-PROCESSOR ..... 7.096 DECIMAL SECONDS OR 000010 OCTAL SECONDS

MINIMUM DYNAMIC STORAGE NEEDED BY PRE-PROCESSOR .. 1169 DECIMAL WORDS

DYNAMIC STORAGE AVAILABLE TO PRE-PROCESSOR ..... 10000 DECIMAL WORDS

NORMAL TERMINATION BY PRE-PROCESSOR

```
@PMD,BLEP

@ASG,T/S RSO.,BC,RSO,92,RSO APPENDIX H, CASE 1.

@TEST TNE/1/S3

@JUMP L3
INTERVENING STATEMENTS SKIPPED

@L3:FREE DATA1.

@FREE 14
```

```
@FREE RIOS.

@FREE RIO2

@FREE CMERG

@FREE EMERG

@FREE INFO
```

```
@FOR.S1 TPF$.TRASYS
FOR S0E3-06/22/78-20:27:01 (.0)

   MAIN PROGRAM

   STORAGE USED: CODE(1) 000123; DATA(0) 000001; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   CCONST 000205
    0004   TAPE   000042
    0005   RSTRT  000017
    0006   TITLE  000037
    0007   PLOT   000234
    0010   BLKDIR 000040
    0011   BCSN   000010
    0012   INDX   000001
    0013   NMODIR 000050
    0014   INDXS  000023
    0015   INDXN  000023
    0016   DIMS   000157
    0017   OSTR   000271
    0020   IFS    000045
    0021   IKS    000045
    0022   PR     000112
    0023   PSH    000224
    0024   TSTR   000515
    0025   ALPH   000023
    0026   AREA   000023
    0027   EMISS  000023
    0030   SRIR   000023
    0031   SRSO   000023
    0032   TRIR   000023
    0033   TRSO   000023
    0034   NODE   000023
    0035   ODTEMP 000144
    0036   ORBIT  000121
    0037   DSTORE 000044
    0040   ISTPDR 000001
    0041   NSPEC  000001
    0042   ISPEC  000001
    0043   SREFLI 000001
    0044   SREFLS 000001
    0045   PLOTTR 000051
    0046   LNGSEG 000027


  EXTERNAL REFERENCES (BLOCK, NAME)

    0047   RDPROG
    0050   ODPROG
    0051   PRDUMP
    0052   FFPROG
    0053   RBPROG
    0054   CMPROG
    0055   SFPROG
    0056   NPPROG
```

```
0057  OPPROG
0060  DIPROG
0061  DRPROG
0062  GBPROG
0063  RCPROG
0064  AQPROG
0065  QOPROG
0066  PLPROG
0067  MFPROG
0070  HRAPUP
0071  EXIT
0072  NINTR$
0073  NERR2$
0074  NSTOP$
```

STORAGE ASSIGNMENT (BLOCK, TYPE, RELATIVE LOCATION, NAME)

```
0001  000004 100L    0001  000040 1300L   0001  000043 1325L   0001  000046 1350L   0001  000051 1400L
0001  000054 1500L   0001  000057 1600L   0001  000062 1700L   0001  000065 1750L   0001  000070 1800L
0001  000073 1900L   0001  000076 2000L   0001  000101 2100L   0001  000104 2200L   0001  000107 2300L
0001  000112 2400L   0001  000115 3000L   0036  000000 ALAN    0025  000000 ALPH    0038  000016 APER
0003  000202 AQPRNT  0003  000172 ARAD    0028  000000 AREA    0038  000001 ASUN    0038  000114 ATMT
0036  000037 BETA    0036  000015 BETAS   0011  000003 BOXINL  0011  000004 BOXINR  0011  000005 BOXOUT
0036  000036 CIGMA   0036  000014 CIGMAS  0036  000065 CLOCK   0036  000066 CONE    0036  000112 DAWN
0003  000146 DELCT   0003  000014 DIACC   0003  000015 DIACCS  0018  000000 DIMS    0003  000016 DINOSH
0003  000017 DIPNCH  0003  000143 DLTLNE  0036  000113 DOY     0017  000000 DSTR    0006  000027 DTE
0003  000000 DTR     0036  000111 DUSK    0036  000003 DWP     0036  000004 ECC     0003  000168 ELPBEA
0027  000000 EMISS   0003  000020 FFACC   0003  000021 FFACCS  0003  000125 FFCMB   0003  000133 FFDISP
0003  000022 FFMIN   0003  000175 FFNAC   0003  000024 FFNOSH  0003  000025 FFPNCH  0003  000026 FFPRNT
0003  000023 FFRATL  0003  000171 FFZERO  0003  000147 FOG     0003  000203 GAUSS   0003  000030 GBWBND
0036  000028 GRAV    0036  000030 HA      0036  000031 HP      0003  000115 IAI     0003  000113 IALBFL
0003  000060 IAQOBI  0003  000061 IAQODS  0003  000063 IAQSDA  0003  000064 IAQSDP  0003  000062 IAQSDS
0003  000116 IAS     0003  000027 IAUTOC  0036  000083 ICALFL  0003  000130 ICMBL   0037  000000 IDSTR
0003  000124 IEQFF   0003  000123 IFFSMO  0020  000000 IFS     0008  000033 IHSTEP  0021  000000 IKS
0003  000164 ILLUMN  0003  000105 IMESS   0003  000131 INCORE  0015  000000 INDXN   0014  000000 INDXS
0036  000101 INSHAD  0003  000163 INTMF   0007  000077 IOPNNP  0007  000201 IOPNV   0007  000113 IOPNVU
0007  000105 IOPTIT  0036  000006 IORBIT  0036  000005 IORNT   0003  000010 IOVL    0006  000031 IPAGE
0003  000114 IPLAFL  0045  000004 IPLNA   0045  000005 IPLSN   0045  000000 IPLUNT  0003  000034 IPROMP
0003  000065 IQOARY  0003  000066 IQOCOR  0003  000074 IQOTAB  0003  000077 IQOTME  0003  000032 IRKCN
0003  000035 IRKNSP  0036  000073 IROTX   0036  000074 IROTY   0038  000075 IROTZ   0003  000140 IRSI
0003  000141 IRTI    0003  000174 ISFAC   0036  000077 ISFT    0007  000233 ISHO    0003  000137 ISKIP
0038  000025 ISKPSO  0003  000112 ISOLFL  0042  000000 ISPEC   0003  000108 ISPND   0040  000000 ISTPDR
0003  000150 ISTRT   0003  000057 ITRALL  0003  000053 ITRCA0  0003  000054 ITRCB0  0003  000055 ITRCC0
0003  000056 ITRCD0  0003  000042 ITRC10  0003  000043 ITRC20  0003  000044 ITRC30  0003  000045 ITRC40
0003  000046 ITRC50  0003  000047 ITRC60  0003  000050 ITRC70  0003  000051 ITRC80  0003  000052 ITRC90
0045  000047 IIPLOT  0004  000033 KBCDOU  0004  000035 KRSI    0004  000036 KRSO    0004  000037 KRTI
0004  000040 KRTO    0004  000034 KTRAJ   0046  000011 LAQSEG  0046  000023 LCHCOM  0046  000022 LCMSEG
0046  000006 LDISEG  0046  000021 LDRSEG  0046  000002 LFFSEG  0046  000010 LGBCOM  0046  000007 LGBSEG
0011  000006 LIDINR  0011  000007 LIDOUT  0011  000000 LIDSP   0008  000032 LINE    0046  000025 LMFSEG
0046  000004 LNPSEG  0046  000000 LODSEG  0046  000005 LOPSEG  0046  000016 LPLCOM  0046  000015 LPLSEG
0046  000013 LQOCOM  0046  000012 LQOSEG  0046  000014 LRBSEG  0046  000020 LRCCOM  0046  000017 LRCSEG
0046  000001 LRDSEG  0046  000003 LSFSEG  0003  000003 MAXBC   0046  000024 MAXFL   0003  000151 MB
0011  000001 MESSL   0011  000002 MESSR   0003  000153 MFCO    0003  000154 MFLUK   0003  000152 MG
0003  000142 MITSIN  0006  000035 MLINE   0003  000200 MNND    0006  000026 MODELN  0003  000135 MRSRC
0003  000155 MSRF    0007  000232 NACT    0004  000023 NBCDOU  0003  000100 NBCDSK  0010  000000 NBLKDR
0003  000013 NBLKLN  0003  000156 NCONT   0046  000026 NCURFL  0004  000000 NDI     0004  000001 NDIR
```

```
0003  000157 NELN      0003  000107 NERN      0004  000002 NFF       0004  000003 NFFR      0003  000201 NFFTYP
0003  000144 NFIGCO    0003  000162 NFIGFF    0003  000178 NFIGGB    0045  000048 NFRHC     0004  000004 NGBIR
0004  000005 NGBIRR    0004  000006 NGBSQ     0003  000165 NIBBLE    0008  000034 NJOB      0012  000000 NLRIO
0003  000110 NMESS     0003  000160 NMIR      0006  000038 NMODEL    0013  000000 NMODIR    0003  000132 NMODLS
0003  000004 NN        0003  000006 NNOD      0003  000128 NNODC     0003  000127 NNODU     0034  000000 NODE
0004  000010 NOUT      0004  000017 NPLS      0004  000020 NPLSR     0007  000000 NPNNP     0007  000008 NPTIT
0004  000022 NPUN      0007  000017 NPVU      0004  000011 NRAN      0004  000007 NRARR     0003  000177 NRMOD
0004  000025 NRSI      0004  000026 NRSO      0003  000136 NRSP      0005  000006 NRSRCB    0005  000011 NRSRCE
0005  000003 NRSRCI    0005  000000 NRSRCO    0005  000014 NRSRCT    0004  000027 NRTI      0004  000030 NRTO
0003  000005 NS        0004  000041 NSCRR     0004  000012 NSCR1     0004  000013 NSCR2     0004  000014 NSCR3
0041  000000 NSPEC     0036  000064 NSPFF     0003  000111 NSPND     0004  000021 NSQNTL    0003  000012 NSSTEP
0003  000011 NSTEP     0003  000145 NSTPDI    0003  000122 NSTPL     0003  000121 NSTSOL    0003  000007 NSURF
0006  000013 NTITLE    0004  000015 NTQ       0004  000016 NTQR      0004  000024 NTRAJ     0004  000031 NUSER1
0004  000032 NUSER2    0035  000000 ODTEMP    0036  000027 OINC      0007  000121 OPROT     0007  000202 OPRPLN
0007  000165 OPSCL     0007  000173 OPSCLR    0007  000216 OPTIMP    0007  000224 OPTIMS    0007  000210 OPTRUE
0036  000041 ORNT      0036  000011 PALB      0036  000007 PERIOD    0003  000002 PI        0036  000106 PLCL
0045  000050 PLCMB     0036  000107 PLCO      0045  000001 PLCRVF    0045  000006 PLLABX    0045  000013 PLLABY
0045  000020 PLTITI    0045  000032 PLTIT2    0036  000100 PLTYPE    0045  000002 PLXMPF    0045  000003 PLYMPF
0036  000076 PNAME     0022  000000 PR        0036  000012 PRAD      0036  000002 PSD       0023  000000 PSH
0003  000067 QOAMPF    0003  000070 QOFMPF    0003  000076 QOPNCH    0003  000072 QORMPF    0003  000075 QOTAPE
0003  000071 QOTMPF    0003  000073 QOTYPE    0003  000102 RALB      0038  000067 RATE      0003  000104 RFRAC
0003  000031 RKAMPF    0003  000033 RKMIN     0003  000038 RKPNCH    0003  000037 RKSP      0003  000040 RKTAPE
0036  000070 ROTX      0036  000071 ROTY      0036  000072 ROTZ      0003  000103 RPLAN     0003  000101 RSOLAR
0036  000013 RSUN      0003  000001 RTD       0036  000040 RTMET     0003  000204 RTOL      0003  000161 SAOS
0003  000134 SFPRNT    0036  000102 SHADIN    0036  000103 SHAOUT    0003  000041 SIGMA     0038  000024 SOL
0036  000115 SOLO      0036  000052 SPINT     0043  000000 SREFLI    0044  000000 SREFLS    0030  000000 SRIR
0031  000000 SRSO      0003  000173 STRACK    0038  000034 STRDEC    0036  000033 STRRA     0038  000104 SUNCL
0036  000105 SUNCO     0036  000035 SUNDEC    0036  000116 SUNPVO    0036  000032 SUNRA     0003  000167 TDIAM
0003  000170 THGHT     0038  000022 TIMEPR    0036  000021 TIMEST    0038  000110 TIMSP     0008  000000 TITLE
0008  000030 TME       0032  000000 TRIR      0033  000000 TRSO      0003  000117 TRUANF    0003  000120 TRUANI
0036  000023 TRUEAN    0024  000000 TSTR      0036  000017 WDS       0036  000010 WSS       0036  000020 WSUN
0007  000025 ZNPROT    0007  000071 ZNPSCL
```

```
00101    1*          COMMON /CCONST/   DTR    . RTD    . PI     . MAXBC  . NN      000000
00101    2*        .        . NS      . NNOD   . NSURF  . IOVL   . NSTEP  . NSSTEP  000000
00101    3*        .        . NBLKLN  . DIACC  . DIACCS . DINOSH . DIPNCH . FFACC   000000
00101    4*        .        . FFACCS  . FFMIN  . FFRATL . FFNOSH . FFPNCH . FFPRNT  000000
00101    5*        .        . IAUTOC  . GBWBND . RKAMPF . IRKCN  . RKMIN  . IPRDMP  000000
00101    6*        .        . IRKNSP  . RKPNCH . RKSP   . RKTAPE . SIGMA  . ITRC10  000000
00101    7*        .        . ITRC20  . ITRC30 . ITRC40 . ITRC50 . ITRC60 . ITRC70  000000
00101    8*        .        . ITRC80  . ITRC90 . ITRCA0 . ITRCB0 . ITRCC0 . ITRCD0  000000
00101    9*        .        . ITRALL  . IAQGBI . IAQGBS . IAQSDS . IAQSDA . IAQSDP  000000
00101   10*        .        . IQOARY  . IQOCOR . QOAMPF . QOFMPF . QOTMPF . QORMPF  000000
00101   11*        .        . QOTYPE  . IQOTAB . QOTAPE . QOPNCH . IQOTME . NBCOSK  000000
00101   12*        .        . RSOLAR  . RALB   . RPLAN  . RFRAC  . IMESS  . ISPND   000000
00101   13*        .        . NERN    . NMESS  . NSPND  . ISOLFL . IALBFL . IPLAFL  000000
00101   14*        .        . IAI     . IAS    . TRUANF . TRUANI . NSTSOL . NSTPL   000000
00101   15*        .        . IFFSHO  . IEQFF  . FFCMB  . NNODC  . NNODU  . ICMBL   000000
00101   16*        .        . INCORE  . NMODLS . FFDISF . SFPRNT . MRSRC  . NRSP    000000
00101   17*        .        . ISKIP   . IRSI   . IRTI   . MITSIN . DLTLNE           000000
00103   18*          COMMON /CCONST/   NFIGCO . NSTPDI . DELCT  . FOB    . ISTRT   000001
00103   19*        .        . MB      . MG     . MFCO   . MFLUK  . MSRF   . NCONT   000001
00103   20*        .        . NELN    . NMIR   . SAOS   . NFIGFF . INTMF  . ILLUMN  000001
00103   21*        .        . NIBBLE  . ELPBEA . TDIAM  . THGHT  . FFZERO . ARAD    000001
```

```
00103    22*          .          . STRACK . ISFAC  . FFNAC  . NFIGGB . NRHOD  . MNND                    000001
00103    23*          .          . NFFTYP . AQPRNT . GAUSS  . RTOL                                      000001
00104    24*            COMMON /TAPE  /    NDI      . NDIR   . NFF    . NFFR                          000001
00104    25*          1                    . NGBIR  . NGBIRR . NGBSO  . NRARR                         000001
00104    26*          2                    . NOUT   . NRAN   . NSCR1  . NSCR2                         000001
00104    27*          3                    . NSCR3  . NTQ    . NTQR   . NPLS                          000001
00104    28*          4                    . NPLSR  . NSQNTL . NPUN   . NBCDOU                        000001
00104    29*          5                    . NTRAJ  . NRSI   . NRSO   . NRTI                          000001
00104    30*          6                    . NRTO   . NUSER1 . NUSER2                                 000001
00104    31*          7                    . KBCDOU . KTRAJ  . KRSI   . KRSO                          000001
00104    32*          8                    . KRTI   . KRTO   . NSCRR                                  000001
00105    33*            COMMON /RSTRT /    NRSRC0(3)          . NRSRC1(3)                             000001
00105    34*          1                    . NRSRCB(3)        . NRSRCE(3)                             000001
00105    35*          2                    . NRSRCT(3)                                                000001
00106    36*            COMMON /TITLE /    TITLE (11)           . NTITLE(11)                          000001
00106    37*          1                    . MODELN . DTE     . TME    . IPAGE                        000001
00106    38*          2                    . LINE   . IHSTEP  . NJOB   . MLINE                       000001
00106    39*          3                    . NMODEL                                                   000001
00107    40*            COMMON /PLOT  /    NPNHP(6)           . NPTIT(9)                            000001
00107    41*          1                    . NPVU(8)          . ZNPROT(6,6)                         000001
00107    42*          2                    . ZNPSCL(6)        . IOPNHP(6)                           000001
00107    43*          3                    . IOPTIT(6)        . IOPNVU(6)                           000001
00107    44*          4                    . OPROT(6,6)       . OPSCL(6)                            000001
00107    45*          5                    . OPSCLR(6)        . IOPNV                               000001
00107    46*          6                    . OPRPLN(6)        . OPTRUE(6)                           000001
00107    47*          7                    . OPTINP(6)        . OPTIMS(6)                           000001
00107    48*          8                    . NACT             . ISHO                                000001
00110    49*            COMMON /BLKDIR/    NBLKDR(4,    8)                                            000001
00111    50*            COMMON /BCSN  /    LIDSP  . MESSL  . MESSR  . BOXINL . BOXINR                000001
00111    51*          .          . BOXOUT . LIDINR . LIDOUT                                           000001
00112    52*            COMMON /INDX  /    NLRIO                                                     000001
00113    53*            COMMON /NHODIR/    NHODIR(2,   20)                                           000001
00114    54*            COMMON /INDXS /    INDXS (   19)                                             000001
00115    55*            COMMON /INDXN /    INDXN (   19)                                             000001
00116    56*            COMMON /DIMS  /    DIMS(3,   37)                                             000001
00117    57*            COMMON /DSTR  /    DSTR  (5,   37)                                           000001
00120    58*            COMMON /IFS   /    IFS   (   37)                                             000001
00121    59*            COMMON /IKS   /    IKS   (   37)                                             000001
00122    60*            COMMON /PR    /    PR    (2,   37)                                           000001
00123    61*            COMMON /PSH   /    PSH   (4,   37)                                           000001
00124    62*            COMMON /TSTR  /    TSTR  (3,3,   37)                                         000001
00125    63*            COMMON /ALPH  /    ALPH  (   19)                                             000001
00126    64*            COMMON /AREA  /    AREA  (   19)                                             000001
00127    65*            COMMON /EMISS /    EMISS (   19)                                             000001
00130    66*            COMMON /SRIR  /    SRIR  (   19)                                             000001
00131    67*            COMMON /SRSO  /    SRSO  (   19)                                             000001
00132    68*            COMMON /TRIR  /    TRIR  (   19)                                             000001
00133    69*            COMMON /TRSO  /    TRSO  (   19)                                             000001
00134    70*            COMMON /NODE  /    NODE  (   19)                                             000001
00135    71*            COMMON /ODTEMP/    ODTEMP(  100)                                             000001
00136    72*            COMMON /ORBIT /    ALAN     . ASUN   . PSD    . DHP                          000001
00136    73*          1                    . ECC    . IORNT  . IORBIT . PERIOD                       000001
00136    74*          2                    . HSS    . PALB   . PRAD   . RSUN                         000001
00136    75*          3                    . CIGMAS . BETAS  . APER   . HDS                          000001
00136    76*          4                    . HSUN   . TIMEST . TIMEPR . TRUEAN                       000001
00136    77*          5                    . SOL    . ISKPSO . GRAV   . OINC                         000001
00136    78*          6                    . HA     . HP     . SUNRA  . STRRA                        000001
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00136    79*          7                 . STRDEC   . SUNDEC   . CIGMA    . BETA                    000001
00136    80*          8                 . RTHET    . ORNT(3,3)           . SPINT(3,3)              000001
00136    81*          9                 . ICALFL   . NSPFF    . CLOCK    . CONE                    000001
00136    82*          0                 . RATE     . ROTX     . ROTY     . ROTZ                    000001
00136    83*          1                 . IROTX    . IROTY    . IROTZ    . PNAME                   000001
00136    84*          2                 . ISFT     . PLTYPE   . INSHAD   . SHADIN                  000001
00136    85*          3                 . SHAOUT   . SUNCL    . SUNCO    . PLCL                    000001
00136    86*          4                 . PLCO     . TIMSP    . DUSK     . DAWN                    000001
00136    87*          5                 . DOY      . ATMT     . SOLO     . SUNPVO(3)               000001
00137    88*            COMMON /DSTORE/   IDSTR (12,3)                                             000001
00140    89*            COMMON /ISTPOR/   ISTPOR(    1)                                            000001
00141    90*            COMMON /NSPEC /   NSPEC                                                    000001
00142    91*            COMMON /ISPEC /   ISPEC (    1)                                            000001
00143    92*            COMMON /SREFLI/   SREFLI(    1)                                            000001
00144    93*            COMMON /SREFLS/   SREFLS(    1)                                            000001
00145    94*            COMMON /PLOTTR/   IPLUNT   . PLCRVF   . PLXMPF   . PLYMPF                  000001
00145    95*          1                 . IPLNA    . IPLSN    . PLLABX(5)                          000001
00145    96*          2                 . PLLABY(5)           . PLTITI(10)                         000001
00145    97*          3                 . PLTIT2(12)          . NFRMC    . IIPLOT                  000001
00145    98*          4                 . PLCMB                                                    000001
00146    99*            COMMON /LNGSEG/   LODSEG   . LRDSEG   . LFFSEG   . LSFSEG                  000001
00146   100*          1                 . LNPSEG   . LOPSEG   . LDISEG   . LGBSEG                  000001
00146   101*          2                 . LGBCOM   . LAQSEG   . LQOSEG   . LQOCOM                  000001
00146   102*          3                 . LRBSEG   . LPLSEG   . LPLCOM   . LRCSEG                  000001
00146   103*          4                 . LRCCOM   . LDRSEG   . LCMSEG   . LCMCOM                  000001
00146   104*          5                 . MAXFL    . LHFSEG   . NCURFL                             000001
00147   105*            CALL RDPROG                                                                000001
00150   106*     100    CONTINUE                                                                   000004
00151   107*            CALL ODPROG                                                                000004
00152   108*            IF(IPRDMP.NE.0)                    CALL PRDUMP (IPRDMP)                    000005
00154   109*            GO TO (1300,1400,1500,1600,1700,1800,1900,2000,                            000012
00154   110*          1        2100,1325,2200,2300,1750,1350,2400,3000                             000012
00154   111*          2        ), IOVL                                                             000012
00155   112*     1300   CONTINUE                                                                   000040
00156   113*            CALL FFPROG                                                                000040
00157   114*            GO TO 100                                                                  000041
00160   115*     1325   CONTINUE                                                                   000043
00161   116*            CALL RBPROG                                                                000043
00162   117*            GO TO 100                                                                  000044
00163   118*     1350   CONTINUE                                                                   000046
00164   119*            CALL CMPROG                                                                000046
00165   120*            GO TO 100                                                                  000047
00166   121*     1400   CONTINUE                                                                   000051
00167   122*            CALL SFPROG                                                                000051
00170   123*            GO TO 100                                                                  000052
00171   124*     1500   CONTINUE                                                                   000054
00172   125*            CALL NPPROG                                                                000054
00173   126*            GO TO 100                                                                  000055
00174   127*     1600   CONTINUE                                                                   000057
00175   128*            CALL OPPROG                                                                000057
00176   129*            GO TO 100                                                                  000060
00177   130*     1700   CONTINUE                                                                   000062
00200   131*            CALL DIPROG                                                                000062
00201   132*            GO TO 100                                                                  000063
00202   133*     1750   CONTINUE                                                                   000065
00203   134*            CALL DRPROG                                                                000065
00204   135*            GO TO 100                                                                  000066
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00205    136*      1800  CONTINUE                                  000070
00206    137*            CALL GBPROG                               000070
00207    138*            GO TO 100                                 000071
00210    139*      1900  CONTINUE                                  000073
00211    140*            CALL RCPROG                               000073
00212    141*            GO TO 100                                 000074
00213    142*      2000  CONTINUE                                  000076
00214    143*            CALL AQPROG                               000076
00215    144*            GO TO 100                                 000077
00216    145*      2100  CONTINUE                                  000101
00217    146*            CALL QOPROG                               000101
00220    147*            GO TO 100                                 000102
00221    148*      2200  CONTINUE                                  000104
00222    149*            CALL PLPROG                               000104
00223    150*            GO TO 100                                 000105
00224    151*      2300  CONTINUE                                  000107
00225    152*            CALL RCPROG                               000107
00226    153*            GO TO 100                                 000110
00227    154*      2400  CONTINUE                                  000112
00230    155*            CALL MFPROG                               000112
00231    156*            GO TO 100                                 000113
00232    157*      3000  CONTINUE                                  000115
00233    158*            CALL WRAPUP                               000115
00234    159*            CALL EXIT                                 000116
00235    160*            END                                       000122

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR.SI TPFS.ODPROG
FOR S0E3-06/22/78-20:27:12 (.0)

   SUBROUTINE ODPROG    ENTRY POINT 000170

   STORAGE USED: CODE(1) 000172; DATA(0) 000053; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   CCONST 000205
    0004   TAPE   000042
    0005   RSTRT  000017
    0006   TITLE  000037
    0007   PLOT   000234
    0010   BLKDIR 000040
    0011   BCSN   000010
    0012   INDX   000001
    0013   NMODIR 000050
    0014   INDXS  000023
    0015   INDXN  000023
    0016   DIMS   000157
    0017   DSTR   000271
    0020   IFS    000045
    0021   IKS    000045
    0022   PR     000112
    0023   PSH    000224
    0024   TSTR   000515
    0025   ALPH   000023
    0026   AREA   000023
    0027   EMISS  000023
    0030   SRIR   000023
    0031   SRSO   000023
    0032   TRIR   000023
    0033   TRSO   000023
    0034   NODE   000023
    0035   ODTEMP 000144
    0036   ORBIT  000121
    0037   DSTORE 000044
    0040   ISTPOR 000001
    0041   NSPEC  000001
    0042   ISPEC  000001
    0043   SREFLI 000001
    0044   SREFLS 000001
    0045   PLOTTR 000051
    0046   LNGSEG 000027
    0047   DIRCT  000034

   EXTERNAL REFERENCES (BLOCK, NAME)

    0050   INTOD
    0051   BUILDC
    0052   ADD
    0053   NDATAS
    0054   GBDATA
```

```
0055   RKDATA
0056   NERR2$
0057   NERR3$
```

STORAGE ASSIGNMENT (BLOCK, TYPE, RELATIVE LOCATION, NAME)

```
0001   000020 I0100L    0001   000033 I0101L    0001   000073 I0102L    0001   000104 I0103L    0001   000114 I0104L
0001   000132 I0105L    0001   000157 I0106L    0036   000000 ALAN      0000 R 000027 ALL       0025   000000 ALPH
0036   000016 APER      0003   000202 AQPRNT    0003   000172 ARAD      0028   000000 AREA      0036   000001 ASUN
0036   000114 ATMT      0000 R 000033 AUTO      0000 R 000036 AV        0000 R 000040 BCDOU     0036   000037 BETA
0036   000015 BETAS     0000 R 000023 BOTH      0011 R 000003 BOXINL    0011 R 000004 BOXINR    0011 R 000005 BOXOUT
0036   000036 CIGMA     0036   000014 CIGMAS    0036   000065 CLOCK     0000 R 000005 CM        0036   000066 CONE
0000 R 000034 CORR      0036   000112 DAHN      0003   000146 DELCT     0003   000014 DIACC     0003   000015 DIACCS
0016   000000 DIMS      0003   000016 DINOSH    0003   000017 DIPNCH    0047   000000 DIRCT     0003   000143 DLTLNE
0036   000113 DOY       0017   000000 DSTR      0008   000027 DTE       0003   000000 DTR       0036   000111 DUSK
0036   000003 DWP       0000 R 000011 EAR       0036   000004 ECC       0003   000166 ELPBEA    0027   000000 EMISS
0000 R 000004 FF        0003   000020 FFACC     0003   000021 FFACCS    0003   000125 FFCMB     0003   000133 FFDISF
0003   000022 FFMIN     0003   000175 FFNAC     0003   000024 FFNOSH    0003   000025 FFPNCH    0003   000026 FFPRNT
0003   000023 FFRATL    0003   000171 FFZERO    0003   000147 FOO       0003   000203 GAUSS     0003   000030 GBWBND
0036   000026 GRAV      0036   000030 HA        0036   000031 HP        0003   000115 IAI       0003   000113 IALBFL
0003   000060 IAQGBI    0003   000061 IAQGBS    0003   000083 IAQSDA    0003   000084 IAQSDP    0003   000062 IAQSDS
0003   000116 IAS       0003   000027 IAUTOC    0036   000063 ICALFL    0003   000130 ICMBL     0037   000000 IDSTR
0003   000124 IEQFF     0003   000123 IFFSMO    0020   000000 IFS       0008   000033 IHSTEP    0021   000000 IKS
0003   000164 ILLUMN    0003   000105 IMESS     0003   000131 INCORE    0015   000000 INDXN     0014   000000 INDXS
0000   000047 INJP$     0036   000101 INSHAD    0003   000163 INTMF     0007   000077 IOPNNP    0007   000201 IOPNV
0007   000113 IOPNVU    0007   000105 IOPTIT    0036   000008 IORBIT    0036   000005 IORNT     0003 I 000010 IOVL
0008   000031 IPAGE     0003   000114 IPLAFL    0045   000004 IPLNA     0045   000005 IPLSN     0045   000000 IPLUNT
0003   000034 IPRDHP    0003   000065 IQOARY    0003   000068 IQOCOR    0003   000074 IQOTAB    0003   000077 IQOTME
0000 I 000025 IR        0003   000032 IRKCN     0003   000035 IRKNSP    0036   000073 IROTX     0036   000074 IROTY
0036   000075 IROTZ     0003   000140 IRSI      0003   000141 IRTI      0003   000174 ISFAC     0036   000077 ISFT
0007   000233 ISHO      0003   000137 ISKIP     0036   000025 ISKPSO    0003   000112 ISOLFL    0042   000000 ISPEC
0003   000106 ISPND     0040   000000 ISTPDR    0003   000150 ISTRT     0003   000057 ITRALL    0003   000053 ITRCA0
0003   000054 ITRC80    0003   000055 ITRCC0    0003   000056 ITRCD0    0000 I 000032 ITRCON    0003   000042 ITRC10
0003   000043 ITRC20    0003   000044 ITRC30    0003   000045 ITRC40    0003   000046 ITRC50    0003   000047 ITRC60
0003   000050 ITRC70    0003   000051 ITRC80    0003   000052 ITRC90    0045   000047 IIPLOT    0000 I 000014 JUP
0004   000033 KBCDOU    0004   000035 KRSI      0004   000036 KRSO      0004   000037 KRTI      0004   000040 KRTO
0000 I 000042 KSTEP     0004   000034 KTRAJ     0048   000011 LAQSEG    0048   000023 LCMCOM    0048   000022 LCMSEG
0046   000006 LDISEG    0046   000021 LDRSEG    0046   000002 LFFSEG    0048   000010 LGBCOM    0046   000007 LGBSEG
0011 I 000006 LIDINR    0011 I 000007 LIDOUT    0011   000000 LIDSP     0006   000072 LINE      0048   000025 LMFSEG
0048   000004 LNPSEG    0046   000000 LODSEG    0048   000005 LOPSEG    0048   000016 LPLCOM    0048   000015 LPLSEG
0046   000013 LQOCOM    0046   000012 LQOSEG    0046   000014 LRBSEG    0046   000000 LRCCOM    0048   000017 LRCSEG
0046   000001 LRDSEG    0046   000003 LSFSEG    0000 I 000013 MAR       0003   000003 MAXBC     0046   000024 MAXFL
0003   000151 MB        0000 I 000007 MER       0011   000001 MESSL     0011   000002 MESSR     0003   000153 MFCO
0003   000154 MFLUK     0003   000152 MG        0003   000142 MITSIN    0006   000036 MLINE     0003   000200 MNMD
0006   000026 MODELN    0000 I 000012 MOO       0003   000135 MRSRC     0003   000156 MSRF      0007   000232 NACT
0004   000023 NBCDOU    0003   000100 NBCDSK    0010   000000 NBLKDR    0003   000013 NBLKLN    0003   000156 NCONT
0046   000026 NCURFL    0004   000000 NDI       0004   000001 NDIR      0003   000147 NELN      0000 I 000016 NEP
0003   000107 NERN      0004   000002 NFF       0004   000003 NFFR      0003   000201 NFFTYP    0003   000144 NFIGCO
0003   000162 NFIGFF    0003   000176 NFIGGB    0045   000046 NFRMC     0004   000004 NGBIR     0004   000005 NGBIRR
0004   000006 NGBSO     0003   000165 NIBBLE    0006   000034 NJOB      0012   000000 NLRID     0003   000110 NMESS
0003   000160 NMIR      0006   000036 NMODEL    0013   000000 NMODIR    0003   000132 NMODLS    0003   000004 NN
0003   000006 NNOD      0003   000126 NNODC     0003   000127 NNODU     0000 I 000000 NO        0034   000000 NODE
0000 I 000003 NOSH      0004   000010 NOUT      0004   000017 NPLS      0004   000020 NPLSR     0007   000000 NPNNP
0007   000006 NPTIT     0004   000022 NPUN      0007   000017 NPVU      0004   000011 NRAN      0004   000007 NRARR
0003   000177 NRNOD     0004   000025 NRSI      0004   000026 NRSO      0003   000136 NRSP      0005   000006 NRSRCB
0005   000011 NRSRCE    0005   000003 NRSRC1    0005   000000 NRSRCO    0005   000014 NRSRCT    0004   000027 NRTI
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0004   000030 NRTO      0003   000005 NS        0004   000041 NSCRR     0004   000012 NSCR1     0004   000013 NSCR2
0004   000014 NSCR3     0041   000000 NSPEC     0036   000064 NSPFF     0003   000111 NSPND     0004   000021 NSQNTL
0003 I 000012 NSSTEP    0003 I 000011 NSTEP     0003   000145 NSTPDI    0003   000122 NSTPL     0003   000121 NSTSOL
0003   000007 NSURF     0008   000013 NTITLE    0004   000015 NTQ       0004   000016 NTQR      0004   000024 NTRAJ
0004   000031 NUSER1    0004   000032 NUSER2    0035   000000 ODTEMP    0036   000027 OINC      0007   000121 OPROT
0007   000202 OPRPLN    0007   000165 OPSCL     0007   000173 OPSCLR    0007   000216 OPTIMP    0007   000224 OPTIMS
0007   000210 OPTRUE    0036   000041 ORNT      0036   000011 PALB      0000 R 000041 PALL      0036   000007 PERIOD
0003   000002 PI        0036   000106 PLCL      0045   000050 PLCMB     0036   000107 PLCO      0045   000001 PLCRVF
0045   000006 PLLABX    0045   000013 PLLABY    0045   000020 PLTITI    0045   000032 PLTIT2    0036   000100 PLTYPE
0045   000002 PLXMPF    0045   000003 PLYMPF    0036   000076 PNAME     0022   000000 PR        0036   000012 PRAD
0036   000002 PSD       0023   000000 PSH       0000 R 000031 PUN       0003   000067 QOAMPF    0003   000070 QOFMPF
0003   000076 QOPNCH    0003   000072 QORMPF    0003   000075 QOTAPE    0003   000071 QOTMPF    0003   000073 QOTYPE
0003   000102 RALB      0036   000067 RATE      0000 R 000006 RB        0000 R 000022 READ      0003   000104 RFRAC
0003   000031 RKAMPF    0003   000033 RKMIN     0003   000036 RKPNCH    0003   000037 RKSP      0003   000040 RKTAPE
0036   000070 ROTX      0036   000071 ROTY      0036   000072 ROTZ      0003   000103 RPLAN     0003   000101 RSOLAR
0036   000013 RSUN      0003   000001 RTD       0036   000040 RTHET     0003   000204 RTOL      0003   000181 SAOS
0000 R 000015 SAT       0000 R 000021 SAVE      0003   000134 SFPRNT    0000 R 000002 SHAD      0036   000102 SHADIN
0036   000103 SHAOUT    0003   000041 SIGMA     0036   000024 SOL       0000 R 000024 SOLAR     0036   000115 SOLO
0000 R 000030 SPACE     0036   000052 SPINT     0043   000000 SREFLI    0044   000000 SREFLS    0030   000000 SRIR
0031   000000 SRSO      0003   000173 STRACK    0036   000034 STRDEC    0038   000033 STRRA     0000 R 000020 SUN
0036   000104 SUNCL     0038   000105 SUNCO     0038   000035 SUNDEC    0038   000116 SUNPVO    0036   000032 SUNRA
0000 R 000026 TAPE      0003   000167 TDIAM     0003   000170 THGHT     0036   000022 TIMEPR    0036   000021 TIMEST
0036   000110 TIMSP     0006   000000 TITLE     0006   000030 TME       0032   000000 TRIR      0033   000000 TRSO
0003   000117 TRUANF    0003   000120 TRUANI    0036   000023 TRUEAN    0024   000000 TSTR      0000 R 000017 URA
0000 R 000037 USER1     0000 R 000010 VEN       0036   000017 WDS       0036   000010 WSS       0036   000020 WSUN
0000 R 000001 YES       0000 R 000035 ZERO      0007   000025 ZNPROT    0007   000071 ZNPSCL
```

```
00101    1*          SUBROUTINE ODPROG                                                                    000000
00103    2*          COMMON /CCONST/     DTR     , RTD     , PI      , MAXBC   , NN                     000000
00103    3*        .           , NS      , NNOD    , NSURF   , IOVL    , NSTEP   , NSSTEP                 000000
00103    4*        .           , NBLKLN  , DIACC   , DIACCS  , DINOSH  , DIPNCH  , FFACC                  000000
00103    5*        .           , FFACCS  , FFMIN   , FFRATL  , FFNOSH  , FFPNCH  , FFPRNT                 000000
00103    6*        .           , IAUTOC  , GBHBND  , RKAMPF  , IRKCN   , RKMIN   , IPROMP                 000000
00103    7*        .           , IRKNSP  , RKPNCH  , RKSP    , RKTAPE  , SIGMA   , ITRC10                 000000
00103    8*        .           , ITRC20  , ITRC30  , ITRC40  , ITRC50  , ITRC60  , ITRC70                 000000
00103    9*        .           , ITRC80  , ITRC90  , ITRCA0  , ITRCB0  , ITRCC0  , ITRCD0                 000000
00103   10*        .           , ITRALL  , IAQGBI  , IAQGBS  , IAQSDS  , IAQSDA  , IAQSDP                 000000
00103   11*        .           , IQOARY  , IQOCOR  , QOAMPF  , QOFMPF  , QOTMPF  , QORMPF                 000000
00103   12*        .           , QOTYPE  , IQOTAB  , QOTAPE  , QOPNCH  , IQOTME  , NBCDSK                 000000
00103   13*        .           , RSOLAR  , RALB    , RPLAN   , RFRAC   , IMESS   , ISPND                  000000
00103   14*        .           , NERN    , NMESS   , NSPND   , ISOLFL  , IALBFL  , IPLAFL                 000000
00103   15*        .           , IAI     , IAS     , TRUANF  , TRUANI  , NSTSOL  , NSTPL                  000000
00103   16*        .           , IFFSHO  , IEQFF   , FFCMB   , NNODC   , NNODU   , ICMBL                  000000
00103   17*        .           , INCORE  , NMODLS  , FFDISF  , SFPRNT  , MRSRC   , NRSP                   000000
00103   18*        .           , ISKIP   , IRSI    , IRTI    , MITSIN  , DLTLNE                          000000
00104   19*          COMMON /CCONST/     NFIGCO  , NSTPDI  , DELCT   , FOG     , ISTRT                   000000
00104   20*        .           , MB      , MG      , MFCO    , MFLUX   , MSRF    , NCONT                   000000
00104   21*        .           , NELN    , NMIR    , SAOS    , NFIGFF  , INTMF   , ILLUMN                  000000
00104   22*        .           , NIBBLE  , ELPBEA  , TDIAM   , THGHT   , FFZERO  , ARAD                   000000
00104   23*        .           , STRACK  , ISFAC   , FFNAC   , NFIGGB  , NRMOD   , MNND                   000000
00104   24*        .           , NFFTYP  , AQPRNT  , GAUSS   , RTOL                                       000000
00105   25*          COMMON /TAPE  /     NDI     , NDIR    , NFF     , NFFR                              000000
00105   26*        1                   , NGBIR   , NGBIRR  , NGBSO   , NRARR                             000000
00105   27*        2                   , NOUT    , NRAN    , NSCR1   , NSCR2                             000000
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00105    28*          3                  . NSCR3   . NTQ     . NTQR    . NPLS                    000000
00105    29*          4                  . NPLSR   . NSQNTL  . NPUN    . NBCDOU                  000000
00105    30*          5                  . NTRAJ   . NRSI    . NRSO    . NRTI                    000000
00105    31*          6                  . NRTO    . NUSER1  . NUSER2                            000000
00105    32*          7                  . KBCDOU  . KTRAJ   . KRSI    . KRSO                    000000
00105    33*          8                  . KRTI    . KRTO    . NSCRR                           000000
00106    34*            COMMON /RSTRT /    NRSRC0(3)          . NRSRC1(3)                       000000
00106    35*          1                  . NRSRCB(3)          . NRSRCE(3)                       000000
00106    36*          2                  . NRSRCT(3)                                            000000
00107    37*            COMMON /TITLE /    TITLE (11)           . NTITLE(11)                    000000
00107    38*          1                  . MODELN  . DTE     . THE     . IPAGE                   000000
00107    39*          2                  . LINE    . IHSTEP  . NJOB    . MLINE                   000000
00107    40*          3                  . NMODEL                                               000000
00110    41*            COMMON /PLOT  /    NPNNP(6)           . NPTIT(9)                      000000
00110    42*          1                  . NPVU(6)            . ZNPROT(6,6)                     000000
00110    43*          2                  . ZNPSCL(6)          . IOPNNP(6)                       000000
00110    44*          3                  . IOPTIT(6)          . IOPNVU(6)                       000000
00110    45*          4                  . OPROT(6,6)         . OPSCL(6)                        000000
00110    46*          5                  . OPSCLR(6)          . IOPNV                           000000
00110    47*          6                  . OPRPLN(6)          . OPTRUE(6)                       000000
00110    48*          7                  . OPTIMP(6)          . OPTIMS(6)                       000000
00110    49*          8                  . NACT               . ISHO                            000000
00111    50*            COMMON /BLKDIR/    NBLKDR(4,    8)                                     000000
00112    51*            COMMON /BCSN  /    LIDSP  . NESSL  . NESSR  . BOXINL . BOXINR          000000
00112    52*          .       . BOXOUT . LIDINR . LIDOUT                                       000000
00113    53*            COMMON /INDX  /    NLRIO                                              000000
00114    54*            COMMON /NMODIR/    NMODIR(2,   20)                                    000000
00115    55*            COMMON /INDXS /    INDXS (   19)                                      000000
00116    56*            COMMON /INDXN /    INDXN (   19)                                      000000
00117    57*            COMMON /DIMS  /    DIMS(3,   37)                                      000000
00120    58*            COMMON /DSTR  /    DSTR  (5,   37)                                    000000
00121    59*            COMMON /IFS   /    IFS   (   37)                                      000000
00122    60*            COMMON /IKS   /    IKS   (   37)                                      000000
00123    61*            COMMON /PR    /    PR    (2,   37)                                    000000
00124    62*            COMMON /PSH   /    PSH   (4,   37)                                    000000
00125    63*            COMMON /TSTR  /    TSTR  (3,3,   37)                                  000000
00126    64*            COMMON /ALPH  /    ALPH  (   19)                                      000000
00127    65*            COMMON /AREA  /    AREA  (   19)                                      000000
00130    66*            COMMON /EMISS /    EMISS (   19)                                      000000
00131    67*            COMMON /SRIR  /    SRIR  (   19)                                      000000
00132    68*            COMMON /SRSO  /    SRSO  (   19)                                      000000
00133    69*            COMMON /TRIR  /    TRIR  (   19)                                      000000
00134    70*            COMMON /TRSO  /    TRSO  (   19)                                      000000
00135    71*            COMMON /NODE  /    NODE  (   19)                                      000000
00136    72*            COMMON /ODTEMP/    ODTEMP(  100)                                      000000
00137    73*            COMMON /ORBIT /    ALAN    . ASUN    . PSD     . DMP                   000000
00137    74*          1                  . ECC     . IORNT   . IORBIT  . PERIOD                000000
00137    75*          2                  . WSS     . PALB    . PRAD    . RSUN                  000000
00137    76*          3                  . CIGMAS  . BETAS   . APER    . WDS                   000000
00137    77*          4                  . WSUN    . TIMEST  . TIMEPR  . TRUEAN                000000
00137    78*          5                  . SOL     . ISKPSO  . GRAV    . OINC                  000000
00137    79*          6                  . HA      . HP      . SUNRA   . STRRA                 000000
00137    80*          7                  . STRDEC  . SUNDEC  . CIGMA   . BETA                  000000
00137    81*          8                  . RTHET   . ORNT(3,3)         . SPINT(3,3)            000000
00137    82*          9                  . ICALFL  . NSPFF   . CLOCK   . CONE                  000000
00137    83*          0                  . RATE    . ROTX    . ROTY    . ROTZ                  000000
00137    84*          1                  . IROTX   . IROTY   . IROTZ   . PNAME                 000000
```

```
00137    85*          2                    .ISFT    .PLTYPE  .INSHAD  .SHADIN                    000000
00137    86*          3                    .SHAOUT  .SUNCL   .SUNCO   .PLCL                      000000
00137    87*          4                    .PLCO    .TIMSP   .DUSK    .DAWN                      000000
00137    88*          5                    .DOY     .ATMT    .SOLO    .SUNPVO(3)                 000000
00140    89*            COMMON /DSTORE/      IDSTR (12,3)                                        000000
00141    90*            COMMON /ISTPDR/      ISTPDR(   1)                                        000000
00142    91*            COMMON /NSPEC /      NSPEC                                               000000
00143    92*            COMMON /ISPEC /      ISPEC (   1)                                        000000
00144    93*            COMMON /SREFLI/      SREFLI(   1)                                        000000
00145    94*            COMMON /SREFLS/      SREFLS(   1)                                        000000
00146    95*            COMMON /PLOTTR/      IPLUNT   .PLCRVF  .PLXHPF  .PLYHPF                  000000
00146    96*          1                    .IPLNA   .IPLSN   .PLLABX(5)                          000000
00146    97*          2                    .PLLABY(5)         .PLTIT1(10)                        000000
00146    98*          3                    .PLTIT2(12)        .NFRHC   .IIPLOT                   000000
00146    99*          4                    .PLCHB                                                000000
00147   100*            COMMON /LNGSEG/      LODSEG   .LRDSEG  .LFFSEG  .LSFSEG                  000000
00147   101*          1                    .LNPSEG  .LOPSEG  .LDISEG  .LGBSEG                    000000
00147   102*          2                    .LGBCOM  .LAQSEG  .LQOSEG  .LQOCOM                    000000
00147   103*          3                    .LRBSEG  .LPLSEG  .LPLCOM  .LRCSEG                    000000
00147   104*          4                    .LRCCOM  .LDRSEG  .LCMSEG  .LCMCOM                    000000
00147   105*          5                    .MAXFL   .LMFSEG  .NCURFL                             000000
00150   106*            COMMON /DIRCT /      DIRCT(   28)                                        000000
00151   107*            DATA     NO      /2HNO    /                                             000000
00153   108*            DATA     YES     /3HYES   /                                             000000
00155   109*            DATA     SHAD    /4HSHAD  /                                             000000
00157   110*            DATA     NOSH    /4HNOSH  /                                             000000
00161   111*            DATA     FF      /2HFF    /                                             000000
00163   112*            DATA     CM      /2HCM    /                                             000000
00165   113*            DATA     RB      /2HRB    /                                             000000
00167   114*            DATA     MER     /3HMER   /                                             000000
00171   115*            DATA     VEN     /3HVEN   /                                             000000
00173   116*            DATA     EAR     /3HEAR   /                                             000000
00175   117*            DATA     MOO     /3HMOO   /                                             000000
00177   118*            DATA     MAR     /3HMAR   /                                             000000
00201   119*            DATA     JUP     /3HJUP   /                                             000000
00203   120*            DATA     SAT     /3HSAT   /                                             000000
00205   121*            DATA     NEP     /3HNEP   /                                             000000
00207   122*            DATA     URA     /3HURA   /                                             000000
00211   123*            DATA     SUN     /3HSUN   /                                             000000
00213   124*            DATA     SAVE    /4HSAVE  /                                             000000
00215   125*            DATA     READ    /4HREAD  /                                             000000
00217   126*            DATA     BOTH    /4HBOTH  /                                             000000
00221   127*            DATA     SOLAR   /3HSOL   /                                             000000
00223   128*            DATA     IR      /2HIR    /                                             000000
00225   129*            DATA     TAPE    /4HTAPE  /                                             000000
00227   130*            DATA     ALL     /3HALL   /                                             000000
00231   131*            DATA     SPACE   /5HSPACE /                                             000000
00233   132*            DATA     PUN     /3HPUN   /                                             000000
00235   133*            DATA     ITRCON  /2HON    /                                             000000
00237   134*            DATA     AUTO    /4HAUTO  /                                             000000
00241   135*            DATA     CORR    /4HCORR  /                                             000000
00243   136*            DATA     ZERO    /4HZERO  /                                             000000
00245   137*            DATA     AV      /2HAV    /                                             000000
00247   138*            DATA     USER1   /5HUSER1 /                                             000000
00251   139*            DATA     BCDOU   /5HBCDOU /                                             000000
00253   140*            DATA PALL/4HPALL/                                                       000000
00253   141*      C                                                                    194       000000
```

```
00253   142*    C-----BUILD THE CASE 1 CONFIGURATION                                    193    000000
00253   143*    C                                                                       194    000000
00255   144*                                          CALL INTOD                               000000
00256   145*                                          KSTEP       = NSTEP                      000001
00257   146*                                          IF(KSTEP.GT.100)   KSTEP = 100           000003
00261   147*          GO TO (  10100                                                           000011
00261   148*         .       ), KSTEP                                                          000011
00261   149*    C                                                                             000011
00261   150*    C**********                                                                   000011
00261   151*    C                                                                             000011
00261   152*    CSTEP      -1                                                           0     000011
00261   153*    C                                                                             000011
00262   154*    10100                                 CONTINUE                                000020
00263   155*          GO TO (  10101 , 10102 , 10103 , 10104 , 10105 , 10106                  000020
00263   156*         .       ), NSSTEP                                                        000020
00264   157*    10101                                 CONTINUE                                000033
00264   158*    CBUILD CASE1,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT                         197    000033
00265   159*          CALL BUILDC (BOXINR,6HCASE1 )                                     0     000033
00266   160*          CALL ADD (BOXINL)                                                 0     000038
00267   161*          CALL ADD (LIDINR)                                                 0     000041
00270   162*          CALL ADD (BOXOUT)                                                 0     000044
00271   163*          CALL ADD (LIDOUT)                                                 0     000047
00271   164*    C                                                                       198    000047
00271   165*    C-----PLOT THE CASE 1 CONFIGURATION INDICATING THE ACTIVE               199    000047
00271   166*    C-----SIDES OF THE NODES.                                               200    000047
00271   167*    C                                                                       201    000047
00272   168*          CALL NDATAS(0,0,0,YES,0)                                          202    000052
00272   169*    C                                                                             000052
00272   170*    CL      NPLOT                                                           203    000052
00272   171*    C                                                                             000052
00273   172*                                          IOVL        =  3                      000061
00274   173*                                          NSTEP       =     1                   000063
00275   174*                                          NSSTEP      =     2                   000065
00276   175*                                          RETURN                                000067
00277   176*    10102                                 CONTINUE                                000073
00277   177*    C                                                                       204    000073
00277   178*    C-----CALCULATE SHADOW FACTOR TABLES FOR SUBSEQUENT USE                 205    000073
00277   179*    C-----SAMPLE CASE 2 IN THE CALCULATION OF DIRECT FLUXES.                206    000073
00277   180*    C                                                                       207    000073
00277   181*    C                                                                             000073
00277   182*    CL      SFCAL                                                           208    000073
00277   183*    C                                                                             000073
00300   184*                                          IOVL        =  2                      000073
00301   185*                                          NSTEP       =     1                   000074
00302   186*                                          NSSTEP      =     3                   000076
00303   187*                                          RETURN                                000100
00304   188*    10103                                 CONTINUE                                000104
00304   189*    C                                                                       209    000104
00304   190*    C-----CALCULATE THE FORM FACTOR MATRIX.                                 210    000104
00304   191*    C                                                                       211    000104
00304   192*    C                                                                             000104
00304   193*    CL      FFCAL                                                           212    000104
00304   194*    C                                                                             000104
00305   195*                                          IOVL        =  1                      000104
00306   196*                                          NSTEP       =     1                   000105
00307   197*                                          NSSTEP      =     4                   000106
00310   198*                                          RETURN                                000110
```

```
00311    199*     10104                                  CONTINUE                                    000114
00311    200*     C                                                                          213      000114
00311    201*     C-----CALCULATE THE GRAY BODY MATRIX.                                      214      000114
00311    202*     C                                                                          215      000114
00312    203*           CALL GBDATA(BOTH,0,FF)                                               216      000114
00312    204*     C                                                                                   000114
00312    205*     CL      GBCAL                                                              217      000114
00312    206*     C                                                                                   000114
00313    207*                                             IOVL       =  6                            000120
00314    208*                                             NSTEP      =     1                         000122
00315    209*                                             NSSTEP     =     5                         000124
00316    210*                                             RETURN                                     000126
00317    211*     10105                                   CONTINUE                                   000132
00317    212*     C                                                                          218      000132
00317    213*     C-----CALCULATE AND PUNCH RADIATION CONDUCTORS.                            219      000132
00317    214*     C                                                                          220      000132
00320    215*           CALL RKDATA(0.0,0.0,0.SPACE,999,0,0,0,0)                             221      000132
00320    216*     C                                                                                   000132
00320    217*     CL      RKCAL                                                              222      000132
00320    218*     C                                                                                   000132
00321    219*                                             IOVL       = 12                            000145
00322    220*                                             NSTEP      =     1                         000147
00323    221*                                             NSSTEP     =     6                         000151
00324    222*                                             RETURN                                     000153
00325    223*     10106                                   CONTINUE                                   000157
00326    224*                                             IOVL       = 16                            000157
00327    225*                                             RETURN                                     000160
00330    226*                                             END                                        000171

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR.SI TPF8.RDPROG
FOR S0E3-05/22/78-20:27:20 (.0)

   SUBROUTINE RDPROG    ENTRY POINT 000011

   STORAGE USED: CODE(1) 000013; DATA(0) 000004; BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003   RDMAIN
    0004   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000   000000 INJP$


00101      1*           SUBROUTINE RDPROG                          000000
00103      2*            CALL RDMAIN                               000000
00104      3*            RETURN                                    000001
00105      4*            END                                       000012

      END OF COMPILATION:       NO  DIAGNOSTICS.
```

```
@FOR.SI TPFS.FFPROG
FOR S0E3-06/22/78-20:27:32 (.0)

   SUBROUTINE FFPROG    ENTRY POINT 000011

   STORAGE USED: CODE(1) 000013; DATA(0) 000004; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   FFVALI 000023
    0004   FFVALS 000023
    0005   BFE    000023
    0006   BFA    000023
    0007   FFRSI1 000001
    0010   FFRSI2 000001
    0011   FFRSI3 000001
    0012   FFRSI4 000001
    0013   FFRSI5 000001
    0014   FFSHDC 000023
    0015   FFSUMC 000023
    0016   FFEQ   000023

   EXTERNAL REFERENCES (BLOCK, NAME)

    0017   FFMAIN
    0020   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0006   000000 BFA       0005   000000 BFE       0013   000000 FFRSIA    0012   000000 FFRSIE    0010   000000 FFRSII
    0011   000000 FFRSIS    0003   000000 FFVALI    0004   000000 FFVALS    0016   000000 INDXF     0000   000000 INJP$
    0014   000000 ISHAD     0007   000000 NODERI    0015   000000 SUM

00101      1*            SUBROUTINE FFPROG                                                    000000
00103      2*             COMMON /FFVALI/    FFVALI(   19)                                    000000
00104      3*             COMMON /FFVALS/    FFVALS(   19)                                    000000
00105      4*             COMMON /BFE   /    BFE(   19)                                       000000
00106      5*             COMMON /BFA   /    BFA(   19)                                       000000
00107      6*             COMMON /FFRSI1/   NODERI(    1)                                     000000
00110      7*             COMMON /FFRSI2/   FFRSII(    1)                                     000000
00111      8*             COMMON /FFRSI3/   FFRSIS(    1)                                     000000
00112      9*             COMMON /FFRSI4/   FFRSID(    1)                                     000000
00113     10*             COMMON /FFPSI5/   FFRSIA(    1)                                     000000
00114     11*             COMMON /FFSHDC/    ISHAD(   19)                                     000000
00115     12*             COMMON /FFSUMC/     SUM(   19)                                     000000
00116     13*             COMMON /FFEQ/     INDXF(   19)                                     000000
00117     14*             CALL FFMAIN                                                        000000
00120     15*             RETURN                                                             000001
00121     16*             END                                                                000012
```

```
END OF COMPILATION:          NO  DIAGNOSTICS.
```

```
8FOR.SI TPFS.SFPROG
FOR S0E3-06/22/78-20:27:37 (.0)

   SUBROUTINE SFPROG    ENTRY POINT 000011

   STORAGE USED: CODE(1) 000013; DATA(0) 000004; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   SFSHDC 000023
    0004   SFQDP  000023
    0005   SFQDR  000023
    0006   SFQDS  000023

   EXTERNAL REFERENCES (BLOCK, NAME)

    0007   SFMAIN
    0010   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000   000000 INJP$     0003   000000 ISHAD     0004   000000 QDP       0005   000000 QDR       0006   000000 QDS


00101      1*            SUBROUTINE SFPROG                                                                  000000
00103      2*             COMMON /SFSHDC/     ISHAD(   19)                                                  000000
00104      3*             COMMON /SFQDP /     QDP(   19)                                                    000000
00105      4*             COMMON /SFQDR /     QDR(   19)                                                    000000
00106      5*             COMMON /SFQDS /     QDS(   19)                                                    000000
00107      6*             CALL SFMAIN                                                                       000000
00110      7*             RETURN                                                                            000001
00111      8*             END                                                                               000012

       END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,SI TPF$.NPPROG
FOR S0E3-06/22/78-20:27:41 (.0)

   SUBROUTINE NPPROG    ENTRY POINT 000011

   STORAGE USED: CODE(1) 000013; DATA(0) 000004; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   MNP    000023

   EXTERNAL REFERENCES (BLOCK, NAME)

    0004   NPMAIN
    0005   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000   000000 INJP$     0003   000000 MNP



00101      1*            SUBROUTINE NPPROG                                  000000
00103      2*             COMMON /MNP   /    MNP(   19)                     000000
00104      3*             CALL NPMAIN                                       000000
00105      4*             RETURN                                            000001
00106      5*             END                                               000012

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR.SI TPF$.GBPROG
FOR SOE3-06/22/70-20:27:45 (.0)

   SUBROUTINE GBPROG    ENTRY POINT 000011

   STORAGE USED: CODE(1) 000013; DATA(0) 000004; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   FA     000023
    0004   SPACE  000023
    0005   XSPACE 000023
    0006   BLKGB  000276

   EXTERNAL REFERENCES (BLOCK, NAME)

    0007   GBMAIN
    0010   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0003   000000 FA        0000   000000 INJP$     0006   000000 IX        0004   000000 SPACE     0005   000000 XSPACE


00101      1*            SUBROUTINE GBPROG                                                          000000
00103      2*             COMMON /FA    /    FA    (   19)                                         000000
00104      3*             COMMON /SPACE /    SPACE (   19)                                         000000
00105      4*             COMMON /XSPACE/    XSPACE(   19)                                         000000
00106      5*             COMMON /BLKGB /   IX(  190)                                              000000
00107      6*             CALL GBMAIN                                                              000000
00110      7*             RETURN                                                                   000001
00111      8*             END                                                                      000012

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,SI TPFS.RCPROG
FOR S@E3-06/22/78-20:27:49 (.6)

   SUBROUTINE RCPROG    ENTRY POINT 000011

   STORAGE USED: CODE(1) 000013; DATA(0) 000004; BLANK COMMON(2) 000000

    COMMON BLOCKS:

    0003   ISPN   000144
    0004   MSND   000144
    0005   NDS    000024
    0006   SFS    000024
    0007   SPCNO  000024
    0010   RCEMIT 000024
    0011   RCARET 000024
    0012   RCSUM1 000023
    0013   RCSUM2 000023
    0014   BLKRC  000574

   EXTERNAL REFERENCES (BLOCK, NAME)

    0015   RCMAIN
    0016   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0011   000000 AREAT     0010   000000 EMIT      0000   000000 INJP$     0003   000000 ISPN      0014   000000 IX
    0004   000000 MSND      0005   000000 NDS       0006   000000 SF        0007   000000 SPACNO    0012   000000 SUM1
    0013   000000 SUM2

00101      1*            SUBROUTINE RCPROG                                                          000000
00103      2*             COMMON /ISPN  /    ISPN  (  100)                                          000000
00104      3*             COMMON /MSND  /    MSND  (  100)                                          000000
00105      4*             COMMON /NDS   /    NDS   (   20)                                          000000
00106      5*             COMMON /SFS   /    SF    (   20)                                          000000
00107      6*             COMMON /SPCNO /    SPACNO(   20)                                          000000
00110      7*             COMMON /RCEMIT/    EMIT  (   20)                                          000000
00111      8*             COMMON /RCARET/    AREAT (   20)                                          000000
00112      9*             COMMON /RCSUM1/    SUM1  (   19)                                          000000
00113     10*             COMMON /RCSUM2/    SUM2  (   19)                                          000000
00114     11*             COMMON /BLKRC /   IX(  380)                                               000000
00115     12*             CALL RCMAIN                                                               000000
00116     13*             RETURN                                                                    000001
00117     14*             END                                                                       000012

     END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FREE CMPL.


@COPY,I MAP.,MAPP
FURPUR 27R1 RL72-8 06/22/78 20:27:53


@FREE MAP


@PREP TPF$
FURPUR 27R1 RL72-8 06/22/78 20:27:54
END PREP.
```

```
@MAP,S MAPP.TRASYSP
MAP20R2 RL71-3 06/22/78 20:27:56 (0,)
SIR:  SI ELEMENT IS NON-SIR TYPE SDF       *(F@@@@@@@@@
    1.      LIB TPF$
    2.      LIB ES3-TRASYS*LIBRYN
    3.      LIB MSC*PLTLIB
    4.      LIB MSC*LOCALIB
    5.      SEG TR
    6.      IN TPF$.TRASYS
    7.      IN NTRAN$/JSC
    8.      SEG RD*,(TR)
    9.      IN TPF$.RDPROG
   10.      SEG OD*,(TR)
   11.      IN TPF$.ODPROG
   12.      SEG FF*,(TR)
   13.      IN TPF$.FFPROG
   14.      SEG SF*,(TR)
   15.      IN TPF$.SFPROG
   16.      SEG NP*,(TR)
   17.      IN TPF$.NPPROG
   18.      SEG GB*,(TR)
   19.      IN TPF$.GBPROG
   20.      SEG RC*,(TR)
   21.      IN TPF$.RCPROG
   22.      END


ADDRESS LIMITS     001000 064120      26193 IBANK WORDS DECIMAL
                   065000 123007      15360 DBANK WORDS DECIMAL
SEGMENT LOAD TABLE        065000 065037
INDIRECT LOAD TABLE       065040 065752
STARTING ADDRESS  027243



          SEGMENT TR              001000 030660      065753 104534

DEPTH(COMMONBLOCK)                                                 065753 065760
FPACK$/HSC8              $(013)  DEPTH              $(0)           065761 066107
NBF00$                                              $(2)           066110 070335
NCNVT$/FOR68             $(1)    001000 001221      $(2)           070336 070432
NINPT$/FORE3-CORR        $(1)    001222 002616      $(2)           070433 070466
NFIND$/FOR-E3            $(1)    002617 003036      $(2)           070467 070537
NFTCH$/FOR-E2            $(1)    003037 003321      $(2)           070540 070553
NOTIN$/FOR-E3            $(1)    003322 003616      $(2)           070554 070557
NCLOS$/FOR-E3            $(1)    003617 004054      $(2)           070560 070605
NRBLK$/FOR-E2            $(1)    004055 004077
NSWTC$/FOR69             $(1)    004100 004124
NBSBL$/FOR-E3            $(1)    004125 004161
NUPDA$/FOR68             $(1)    004162 004215
NHBLK$/FOR68             $(1)    004216 004327
NFCHK$/FOR-E3            $(1)    004330 005321      $(2)           070606 070756
                         $(3)    005322 005322      $(4)           070757 071030
NFTV$/FOR-E2             $(1)    005323 005345
NBDCV$/FOR-E3            $(1)    005346 005476      $(2)           071031 071106
```

NIOER$/FOR-E3	$(1)	005477 005716	$(2)	071107 071250
NFMT$/FOR-E3	$(1)	005717 006601	$(2)	071257 071333
CLOSE$F/FOR-TE3	$(1)	006602 006602		
NEXP6$/FOR-E3	$(1)	006603 007000	$(2)	071334 071405
TANCOTAN$/FOR59	$(1)	007001 007176	$(2)	071406 071426
ATAN$/FOR59	$(1)	007177 007402	$(2)	071427 071460
NWDA$/FOR-E3	$(1)	007403 010150	$(2)	071461 071464
NRDA$/FOR-E3	$(1)	010151 010600	$(2)	071465 071477
SQRT$/FOR59	$(1)	010601 010641	$(2)	071500 071511
SINCOS$/FOR-E3	$(1)	010642 010776	$(2)	071512 071534
NDEF$/FOR-E3	$(1)	010777 011571	$(2)	071535 071636
NFINP$/FOR-E3	$(1)	011572 012217	$(2)	071637 071722
NRWND$/FOR-E3	$(1)	012220 012303	$(2)	071723 071734
NOBUF$/FOR68	$(1)	012304 012344		
NBKSP$/FOR-E3	$(1)	012345 013100	$(2)	071735 071762
NWEF$/FOR-E2	$(1)	013101 013306	$(2)	071763 072002
NIER$/FOR-E3	$(1)	013307 013465	$(2)	072003 072122
NFOUT$/FOR-E3	$(1)	013466 014105	$(2)	072123 072144
FORVCOM$/FOR-TE3			$(2)	072145 072154
NERCOM$/FOR-TE3	$(1)	014106 014165	$(2)	072155 072170
FORCOM$/FORFTN			$(2)	072171 072176
ERU$/SYS72-8				
NTAB$/E3-JSC			$(2)	072177 072236
NSTOP$/FORE3-JSC	$(1)	014166 014265	$(2)	072237 072310
NERR$/FOR-E3	$(1)	014266 014627	$(2)	072311 072470
EXIT$F/FOR-TE3	$(1)	014630 014630		
IDL$/SYS64	$(1)	014631 014677		
NERTRAN$/JSC-E3	$(1)	014700 015054	$(2)	072471 072600
	$(037)	INFO-010-LC		
SCCTAB/SMICHI			$(0)	072601 072704
PRINTV/SMICHI	$(1)	015055 015167	$(0)	072705 072713
PAC	$(1)	015170 015212		
UNPAC	$(1)	015213 015227		
BXLTR			$(0)	072714 073343
FMODE$/LLIB11	$(1)	015230 015342	$(4)	073344 073344
	$(013)	DEPTH		
CNVRT	$(1)	015343 017077	$(0)	073345 073704
			$(2)	BLANK$COMMON
PUT	$(1)	017100 017115		
SCTZ			$(0)	073705 074004
GET	$(1)	017116 017137	$(0)	074005 074006
IDF	$(1)	017140 017215	$(2)	IDINFO
PACKZZ	$(1)	017216 017360	$(0)	074007 074045
	$(3)	IDINFO	$(2)	BLANK$COMMON
PLOT$$	$(1)	017361 017370	$(0)	074046 074051
BUFRZZ	$(1)	017371 017625	$(0)	074052 074143
			$(2)	074144 074413
NOUT$/JSC-E3	$(1)	017626 021341	$(2)	074414 074455
IDINFO(COMMONBLOCK)				074456 074463
IDENT	$(1)	021342 022506	$(0)	074464 075753
			$(2)	IDINFO
ERRZZ	$(1)	022507 022557	$(0)	075754 076012
			$(2)	BLANK$COMMON
NOSYM$/JSC-E3	$(1)	022560 023024	$(2)	076013 076014
EXITG	$(1)	023025 023067	$(0)	076015 076057
			$(2)	BLANK$COMMON
GETSMG	$(1)	023070 023170	$(0)	076060 076071

NINTRS/JSC-E3	$(1)	023171	023531
KLEAR	$(1)	023532	023534
TPERR	$(1)	023535	023584
	$(3)	TAPE	
SKFILE	$(1)	023565	023640
RSRCCK	$(1)	023641	024075
	$(3)	CCONST	
	$(5)	TAPE	
READHD	$(1)	024076	024416
	$(3)	CCONST	
	$(5)	TITLE	
	$(7)	ISTPDR	
STORE	$(1)	024417	024553
	$(3)	CCONST	
	$(5)	DSTORE	
PDUMP	$(1)	024554	025014
FINDST	$(1)	025015	025303
	$(3)	CCONST	
	$(5)	DSTORE	
	$(7)	ACCESS	
SETFLG	$(1)	025304	025401
	$(3)	CCONST	
	$(5)	NMODIR	
SECOND	$(1)	025402	025412
SHIFT	$(1)	025413	025422
LRIODM(COMMONBLOCK)			
RIOPAC	$(1)	025423	025546
	$(3)	LRIODM	
ABT	$(1)	025547	025564
PAGE	$(1)	025565	025714
	$(3)	TAPE	
RETRVE	$(1)	025715	026151
	$(3)	CCONST	
	$(5)	TAPE	
	$(7)	AREA	
	$(011)	ALPH	
	$(013)	TRSO	
	$(015)	SRSO	
	$(017)	ODTEMP	
WRITHD	$(1)	026152	026317
	$(3)	CCONST	
	$(5)	RSTRT	
	$(7)	ACCESS	
ARRAYS(COMMONBLOCK)			
IGS(COMMONBLOCK)			
WRAPUP	$(1)	026320	026374
	$(3)	TAPE	
	$(5)	IGS	
MFPROG	$(1)	026375	026404
	$(2)	BLANK$COMMON	
	$(2)	076072	076141
	$(0)	076142	076173
	$(2)	BLANK$COMMON	
	$(0)	076174	076205
	$(2)	BLANK$COMMON	
	$(0)	076206	076366
	$(2)	BLANK$COMMON	
	$(4)	RSTRT	
	$(0)	076367	076575
	$(2)	BLANK$COMMON	
	$(4)	TAPE	
	$(6)	RSTRT	
	$(010)	ACCESS	
	$(0)	076576	076653
	$(2)	BLANK$COMMON	
	$(4)	TAPE	
	$(0)	076654	076722
	$(2)	BLANK$COMMON	
	$(0)	076723	077061
	$(2)	BLANK$COMMON	
	$(4)	TAPE	
	$(8)	ISTPDR	
	$(0)	077062	077102
	$(2)	BLANK$COMMON	
	$(4)	TITLE	
	$(0)	077103	077104
	$(2)	077105	077105
		077106	077107
	$(0)	077110	077123
	$(2)	BLANK$COMMON	
	$(0)	077124	077131
	$(2)	BLANK$COMMON	
	$(0)	077132	077202
	$(2)	BLANK$COMMON	
	$(4)	TITLE	
	$(0)	077203	077241
	$(2)	BLANK$COMMON	
	$(4)	TITLE	
	$(6)	NODE	
	$(010)	EMISS	
	$(012)	TRIR	
	$(014)	SRIR	
	$(016)	NMODIR	
	$(0)	077242	077263
	$(2)	BLANK$COMMON	
	$(4)	TITLE	
	$(6)	ISTPDR	
		077264	077264
		077265	077574
	$(0)	077575	077624
	$(2)	BLANK$COMMON	
	$(4)	PLOTTR	
	$(0)	077625	077630
	$(2)	BLANK$COMMON	

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PLPROG                          $(1)    026405 026414
                                $(2)    BLANK$COMMON
QQPROG                          $(1)    026415 026424
                                $(2)    BLANK$COMMON
AQPROG                          $(1)    026425 026434
                                $(2)    BLANK$COMMON
DRPROG                          $(1)    026435 026444
                                $(2)    BLANK$COMMON
DIPROG                          $(1)    026445 026454
                                $(2)    BLANK$COMMON
OPPROG                          $(1)    026455 026464
                                $(2)    BLANK$COMMON
CMPROG                          $(1)    026465 026474
                                $(2)    BLANK$COMMON
RBPROG                          $(1)    026475 026504
                                $(2)    BLANK$COMMON
ACCESS(COMMONBLOCK)                     026505 027242
PRDUMP                          $(1)    026505 027242
                                $(3)    ALPH
                                $(5)    CCONST
                                $(7)    NODE
                                $(011)  TITLE
                                $(013)  ACCESS
                                $(015)  SRIR
                                $(017)  TRIR
                                $(0)    077631 077634
                                $(2)    BLANK$COMMON
                                $(0)    077635 077640
                                $(2)    BLANK$COMMON
                                $(0)    077641 077644
                                $(2)    BLANK$COMMON
                                $(0)    077645 077650
                                $(2)    BLANK$COMMON
                                $(0)    077651 077654
                                $(2)    BLANK$COMMON
                                $(0)    077655 077660
                                $(2)    BLANK$COMMON
                                $(0)    077661 077664
                                $(2)    BLANK$COMMON
                                $(0)    077665 077670
                                $(2)    BLANK$COMMON
                                        077671 077673
                                $(0)    077674 100055
                                $(2)    BLANK$COMMON
                                $(4)    AREA
                                $(6)    EMISS
                                $(010)  TAPE
                                $(012)  RSTRT
                                $(014)  ODTEMP
                                $(016)  SRSO
                                $(020)  TRSO
LNGSEG(COMMONBLOCK)                     100056 100104
PLOTTR(COMMONBLOCK)                     100105 100155
SREFLS(COMMONBLOCK)                     100156 100156
SREFLI(COMMONBLOCK)                     100157 100157
ISPEC(COMMONBLOCK)                      100160 100160
NSPEC(COMMONBLOCK)                      100161 100161
ISTPDR(COMMONBLOCK)                     100162 100162
DSTORE(COMMONBLOCK)                     100163 100226
ORBIT(COMMONBLOCK)                      100227 100347
ODTEMP(COMMONBLOCK)                     100350 100513
NODE(COMMONBLOCK)                       100514 100536
TRSO(COMMONBLOCK)                       100537 100561
TRIR(COMMONBLOCK)                       100562 100604
SRSO(COMMONBLOCK)                       100605 100627
SRIR(COMMONBLOCK)                       100630 100652
EMISS(COMMONBLOCK)                      100653 100675
AREA(COMMONBLOCK)                       100676 100720
ALPH(COMMONBLOCK)                       100721 100743
TSTR(COMMONBLOCK)                       100744 101460
PSH(COMMONBLOCK)                        101461 101704
PR(COMMONBLOCK)                         101705 102016
IKS(COMMONBLOCK)                        102017 102063
IFS(COMMONBLOCK)                        102064 102130
DSTR(COMMONBLOCK)                       102131 102421
DIMS(COMMONBLOCK)                       102422 102600
INDXN(COMMONBLOCK)                      102601 102623
INDXS(COMMONBLOCK)                      102624 102646
NMODIR(COMMONBLOCK)                     102647 102716
INDX(COMMONBLOCK)                       102717 102717
BCSN(COMMONBLOCK)                       102720 102727
BLKDIR(COMMONBLOCK)                     102730 102767
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PLOT(COMMONBLOCK)                                                  102770 103223
TITLE(COMMONBLOCK)                                                 103224 103262
RSTRT(COMMONBLOCK)                                                 103263 103301
TAPE(COMMONBLOCK)                                                  103302 103343
CCONST(COMMONBLOCK)                                                103344 103550
BLANK$COMMON(COMMONBLOCK)
TRASYS                $(1)    027243 027365     $(0)    103551 103551
                      $(3)    CCONST            $(2)    BLANK$COMMON
                      $(5)    RSTRT             $(4)    TAPE
                      $(7)    PLOT              $(6)    TITLE
                      $(011)  BCSN              $(010)  BLKDIR
                      $(013)  NMODIR            $(012)  INDX
                      $(015)  INDXN             $(014)  INDXS
                      $(017)  DSTR              $(016)  DIMS
                      $(021)  IKS               $(020)  IFS
                      $(023)  PSH               $(022)  PR
                      $(025)  ALPH              $(024)  TSTR
                      $(027)  EMISS             $(026)  AREA
                      $(031)  SRSO              $(030)  SRIR
                      $(033)  TRSO              $(032)  TRIR
                      $(035)  ODTEMP            $(034)  NODE
                      $(037)  DSTORE            $(036)  ORBIT
                      $(041)  NSPEC             $(040)  ISTPOR
                      $(043)  SREFLI            $(042)  ISPEC
                      $(045)  PLOTTR            $(044)  SREFLS
                                                $(046)  LNGSEG
NTRAN$/JSC            $(1)    027366 030660     $(2)    103552 104534
                      $(037)  INFO-010-LC

          SEGMENT RD*              030661 032341      104535 105471
          FOLLOWS SEGMENT TR

GETPSR                $(1)    030661 031102     $(0)    104535 104616
AAAAAA                $(1)    031103 031122     $(0)    104617 104624
                                                $(2)    BLANK$COMMON
BANNLB                $(1)    031123 031217     $(0)    104625 105263
                      $(3)    TAPE              $(2)    BLANK$COMMON
                                                $(4)    TITLE
UCONST(COMMONBLOCK)                                     105264 105264
RDMAIN                $(1)    031220 032326     $(0)    105265 105465
                      $(3)    CCONST            $(2)    BLANK$COMMON
                      $(5)    ISTPOR            $(4)    TAPE
                      $(7)    PLOTTR            $(6)    PLOT
                      $(011)  LNGSEG            $(010)  TITLE
                      $(013)  UCONST            $(012)  RSTRT
                      $(015)  BCSN              $(014)  ARRAYS
                      $(017)  INDX              $(016)  BLKDIR
                      $(021)  LRIODM            $(020)  DSTORE
                                                $(022)  ODTEMP
RDPROG                $(1)    032327 032341     $(0)    105466 105471
                                                $(2)    BLANK$COMMON

          SEGMENT OD*              030661 034523      104535 105730
          FOLLOWS SEGMENT TR
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IACT	$(1)	030661	030715	$(0)	104535 104544
				$(2)	BLANK$COMMON
SORTS	$(1)	030716	031224	$(0)	104545 104827
				$(2)	BLANK$COMMON
TRS3	$(1)	031225	031305	$(0)	104630 104636
				$(2)	BLANK$COMMON
RCDATA	$(1)	031306	031540	$(0)	104637 104873
	$(3)	CCONST		$(2)	BLANK$COMMON
	$(5)	ISTPDR		$(4)	TITLE
				$(6)	ARRAYS
NDUPCK	$(1)	031541	031617	$(0)	104874 104712
	$(3)	TAPE		$(2)	BLANK$COMMON
	$(5)	NODE		$(4)	CCONST
				$(6)	ODTEMP
NPRNT	$(1)	031620	031750	$(0)	104713 105022
	$(3)	CCONST		$(2)	BLANK$COMMON
				$(4)	TAPE
TRANSF	$(1)	031751	032134	$(0)	105023 105046
				$(2)	BLANK$COMMON
DIRCOS	$(1)	032135	032415	$(0)	105047 105140
	$(3)	CCONST		$(2)	BLANK$COMMON
RKDATA	$(1)	032418	032473	$(0)	105141 105145
				$(2)	BLANK$COMMON
GBDATA	$(1)	032474	032614	$(0)	105146 105233
	$(3)	CCONST		$(2)	BLANK$COMMON
	$(5)	TAPE		$(4)	ISTPDR
				$(6)	TITLE
NDATA	$(1)	032615	033152	$(0)	105234 105270
	$(3)	ARRAYS		$(2)	BLANK$COMMON
	$(5)	PLOT		$(4)	CCONST
				$(6)	TITLE
BUILDC	$(1)	033153	034154	$(0)	105271 105561
	$(3)	BLKDIR		$(2)	BLANK$COMMON
	$(5)	TAPE		$(4)	DIRCT
	$(7)	ALPH		$(6)	AREA
	$(011)	SRSO		$(010)	SRIR
	$(013)	TRSO		$(012)	TRIR
	$(015)	NODE		$(014)	EMISS
	$(017)	NSPEC		$(016)	ISPEC
	$(021)	TITLE		$(020)	CCONST
	$(023)	INDXS		$(022)	NHODIR
				$(024)	INDXN
INTOD	$(1)	034155	034331	$(0)	105562 105621
	$(3)	CCONST		$(2)	BLANK$COMMON
	$(5)	LNGSEQ		$(4)	ISTPDR
				$(6)	TITLE
DIRCT(COMMONBLOCK)					105622 105655
ODPROG	$(1)	034332	034523	$(0)	105656 105730
	$(3)	CCONST		$(2)	BLANK$COMMON
	$(5)	RSTRT		$(4)	TAPE
	$(7)	PLOT		$(6)	TITLE
	$(011)	BCSN		$(010)	BLKDIR
	$(013)	NHODIR		$(012)	INDX
	$(015)	INDXN		$(014)	INDXS
	$(017)	DSTR		$(016)	DIMS
	$(021)	IKS		$(020)	IFS
	$(023)	PSH		$(022)	PR

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                $(025)  ALPH            $(024)  TSTR
                $(027)  ENISS           $(026)  AREA
                $(031)  SRSO            $(030)  SRIR
                $(033)  TRSO            $(032)  TRIR
                $(035)  ODTEMP          $(034)  NODE
                $(037)  DSTORE          $(036)  ORBIT
                $(041)  NSPEC           $(040)  ISTPDR
                $(043)  SREFLI          $(042)  ISPEC
                $(045)  PLOTTR          $(044)  SREFLS
                $(047)  DIRCT           $(048)  LNOSEG

        SEGMENT FF*             030661 064120     104535 123007
        FOLLOWS SEGMENT TR

FFGTST          $(1)    030661 030725   $(0)     104535 104545
                                        $(2)     BLANK$COMMON
FFVWT           $(1)    030726 031377   $(0)     104546 105640
                $(3)     CCONST         $(2)     BLANK$COMMON
FFAREA          $(1)    031400 031755   $(0)     105641 105674
                $(3)     CCONST         $(2)     BLANK$COMMON
FFRPSN          $(1)    031756 033025   $(0)     105675 105760
                $(3)     CCONST         $(2)     BLANK$COMMON
FFCRSS          $(1)    033026 033062   $(0)     105761 105765
                                        $(2)     BLANK$COMMON
FFTRS3          $(1)    033063 033143   $(0)     105766 105774
                                        $(2)     BLANK$COMMON
FFPVW           $(1)    033144 033674   $(0)     105775 106103
                $(3)     CCONST         $(2)     BLANK$COMMON
FFXPNI          $(1)    033675 035630   $(0)     106104 106431
                $(3)     CCONST         $(2)     BLANK$COMMON
                $(5)     RMASS2         $(4)     FFDATI
                                        $(6)     RMASSI
FFUNTI          $(1)    035631 036514   $(0)     106432 106610
                $(3)     CCONST         $(2)     BLANK$COMMON
                $(5)     TAPE           $(4)     RMASSI
FFSHD           $(1)    036515 042155   $(0)     106611 106726
                $(3)     DIMS           $(2)     BLANK$COMMON
                $(5)     TSTR           $(4)     DSTR
                $(7)     IKS            $(6)     IFS
                $(011)   PSH            $(010)   PR
                $(013)   FFSHDC         $(012)   CCONST
                $(015)   FFVALI         $(014)   FFVALS
                $(017)   BFA            $(016)   BFE
                $(021)   FF2RSI         $(020)   FF1RSI
                $(023)   FF4RSI         $(022)   FF3RSI
                $(025)   FFSUMC         $(024)   FF5RSI
FFEXPN          $(1)    042156 044111   $(0)     106727 107254
                $(3)     CCONST         $(2)     BLANK$COMMON
                $(5)     RMASSI         $(4)     FFDATI
                                        $(6)     RMASS2
FFTMCK          $(1)    044112 044121   $(0)     107255 107260
                                        $(2)     BLANK$COMMON
FFPSHD          $(1)    044122 045066   $(0)     107261 107411
                $(3)     DIMS           $(2)     BLANK$COMMON
                $(5)     TSTR           $(4)     DSTR
                $(7)     IKS            $(6)     IFS
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                $(011)  PSH                     $(010)  PR
                $(013)  FFVALS                  $(012)  FFSHDC
                $(015)  BFE                     $(014)  FFVALI
                $(017)  FF1RSI                  $(016)  BFA
                $(021)  FF3RSI                  $(020)  FF2RSI
                $(023)  FF5RSI                  $(022)  FF4RSI
                                                $(024)  FFSUMC
FFUNIT          $(1)    045067 045752           $(0)    107412 107570
                $(3)    CCONST                  $(2)    BLANK$COMMON
                $(5)    TAPE                    $(4)    RMASS2
FFVIEW          $(1)    045753 046442           $(0)    107571 110663
                $(3)    CCONST                  $(2)    BLANK$COMMON
FFELEM          $(1)    046443 050554           $(0)    110664 111004
                $(3)    CCONST                  $(2)    BLANK$COMMON
FFELSL          $(1)    050555 051266           $(0)    111005 111045
                $(3)    CCONST                  $(2)    BLANK$COMMON
FFESUM          $(1)    051267 051365           $(0)    111046 111111
                $(3)    CCONST                  $(2)    BLANK$COMMON
                $(5)    NODE                    $(4)    FFDAT1
                $(7)    FFSHDC                  $(6)    TAPE
                $(011)  FFVALI                  $(010)  FFVALS
                $(013)  BFA                     $(012)  BFE
                $(015)  FF2RSI                  $(014)  FF1RSI
                $(017)  FF4RSI                  $(016)  FF3RSI
                $(021)  FFSUMC                  $(020)  FF5RSI
FFPCL           $(1)    051368 052331           $(0)    111112 111247
                $(3)    AREA                    $(2)    BLANK$COMMON
                $(5)    FFDAT1                  $(4)    CCONST
                $(7)    RMASS1                  $(6)    NODE
                $(011)  DIMS                    $(010)  RMASS2
                $(013)  TSTR                    $(012)  DSTR
                $(015)  IKS                     $(014)  IFS
                $(017)  PSH                     $(016)  PR
                $(021)  FFSHDC                  $(020)  TAPE
                $(023)  FFVALI                  $(022)  FFVALS
                $(025)  BFA                     $(024)  BFE
                $(027)  FF2RSI                  $(026)  FF1RSI
                $(031)  FF4RSI                  $(030)  FF3RSI
                $(033)  FFSUMC                  $(032)  FF5RSI
                $(035)  ELEM                    $(034)  FFELCM
FFCALI          $(1)    052332 053601           $(0)    111250 111421
                $(3)    AREA                    $(2)    BLANK$COMMON
                $(5)    FFDAT1                  $(4)    CCONST
                $(7)    RMASS2                  $(6)    NODE
                $(011)  DIMS                    $(010)  RMASS1
                $(013)  TSTR                    $(012)  DSTR
                $(015)  IKS                     $(014)  IFS
                $(017)  PSH                     $(016)  PR
                $(021)  FFSHDC                  $(020)  TAPE
                $(023)  FFVALI                  $(022)  FFVALS
                $(025)  BFA                     $(024)  BFE
                $(027)  FF2RSI                  $(026)  FF1RSI
                $(031)  FF4RSI                  $(030)  FF3RSI
                $(033)  FFSUMC                  $(032)  FF5RSI
                $(035)  ELEM                    $(034)  FFELCM
FFELCM(COMMON$BLOCK)                                    111422 117311
FFCAL           $(1)    053602 055051           $(0)    117312 117463
```

	$(3)	AREA		$(2)	BLANK$COMMON
	$(5)	FFDATI		$(4)	CCONST
	$(7)	RMASSI		$(6)	NODE
	$(011)	DIMS		$(010)	RMASS2
	$(013)	TSTR		$(012)	DSTR
	$(015)	IKS		$(014)	IFS
	$(017)	PSH		$(016)	PR
	$(021)	FFSHDC		$(020)	TAPE
	$(023)	FFVALI		$(022)	FFVALS
	$(025)	BFA		$(024)	BFE
	$(027)	FF2RSI		$(026)	FF1RSI
	$(031)	FF4RSI		$(030)	FF3RSI
	$(033)	FFSUMC		$(032)	FF5RSI
	$(035)	ELEM		$(034)	FFELCM
FFMINR	$(1)	055052 055160		$(0)	117464 117500
	$(3)	AREA		$(2)	BLANK$COMMON
	$(5)	FFDATI		$(4)	CCONST
	$(7)	TAPE		$(6)	NODE
	$(011)	FFVALS		$(010)	FFSHDC
	$(013)	BFE		$(012)	FFVALI
	$(015)	FF1RSI		$(014)	BFA
	$(017)	FF3RSI		$(016)	FF2RSI
	$(021)	FF5RSI		$(020)	FF4RSI
				$(022)	FFSUMC
FFEQIV	$(1)	055161 055316		$(0)	117501 117540
	$(3)	CCONST		$(2)	BLANK$COMMON
	$(5)	FFVALI		$(4)	FFDATI
	$(7)	TAPE		$(6)	FFVALS
	$(011)	ELEM		$(010)	NODE
FFGEQ	$(1)	055317 056167		$(0)	117541 117626
	$(3)	CCONST		$(2)	BLANK$COMMON
	$(5)	NODE		$(4)	TAPE
	$(7)	FFVALS		$(6)	FFSHDC
	$(011)	BFE		$(010)	FFVALI
	$(013)	FF1RSI		$(012)	BFA
	$(015)	FF3RSI		$(014)	FF2RSI
	$(017)	FF5RSI		$(016)	FF4RSI
	$(021)	FFDATI		$(020)	FFSUMC
				$(022)	ODTEMP
FFRTR	$(1)	056170 056427		$(0)	117627 117705
	$(3)	CCONST		$(2)	BLANK$COMMON
	$(5)	TAPE		$(4)	FFDATI
	$(7)	FFVALI		$(6)	RSTRT
	$(011)	BFE		$(010)	FFVALS
	$(013)	NODE		$(012)	BFA
				$(014)	TITLE
FFRSHR	$(1)	056430 056547		$(0)	117706 120115
	$(3)	CCONST		$(2)	BLANK$COMMON
	$(5)	NODE		$(4)	FFDATI
	$(7)	TAPE		$(6)	RMASSI
	$(011)	FFVALS		$(010)	FFSHDC
	$(013)	BFE		$(012)	FFVALI
	$(015)	FF1RSI		$(014)	BFA
	$(017)	FF3RSI		$(016)	FF2RSI
	$(021)	FF5RSI		$(020)	FF4RSI
	$(023)	AREA		$(022)	FFSUMC
				$(024)	FFSHO

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ELEM(COMMONBLOCK)
                                                                  120118 120117
FFPRT           $(1)    056550 057210       $(0)    120120 120346
                $(3)    AREA                $(2)    BLANK$COMMON
                $(5)    FFDAT1              $(4)    CCONST
                $(7)    TAPE                $(6)    NODE
                $(011)  FFVALS              $(010)  FFSHDC
                $(013)  BFE                 $(012)  FFVAL1
                $(015)  FF1RS1              $(014)  BFA
                $(017)  FF3RS1              $(016)  FF2RS1
                $(021)  FF5RS1              $(020)  FF4RS1
                $(023)  ELEM                $(022)  FFSUMC
FFPCH           $(1)    057211 057506       $(0)    120347 120430
                $(3)    CCONST              $(2)    BLANK$COMMON
                $(5)    FFDAT1              $(4)    NODE
                $(7)    FFSHDC              $(6)    TAPE
                $(011)  FFVAL1              $(010)  FFVALS
                $(013)  BFA                 $(012)  BFE
                $(015)  FF2RS1              $(014)  FF1RS1
                $(017)  FF4RS1              $(016)  FF3RS1
                $(021)  FFSUMC              $(020)  FF5RS1
                $(023)  TITLE               $(022)  ISTPDR
FFRIN           $(1)    057507 060404       $(0)    120431 120566
                $(3)    CCONST              $(2)    BLANK$COMMON
                $(5)    NODE                $(4)    FFDAT1
                $(7)    FFSHDC              $(6)    TAPE
                $(011)  FFVAL1              $(010)  FFVALS
                $(013)  BFA                 $(012)  BFE
                $(015)  FF2RS1              $(014)  FF1RS1
                $(017)  FF4RS1              $(016)  FF3RS1
                $(021)  FFSUMC              $(020)  FF5RS1
                                            $(022)  ODTEMP
FFEND           $(1)    060405 060425       $(0)    120567 120572
                $(3)    CCONST              $(2)    BLANK$COMMON
                $(5)    FFSHDC              $(4)    TAPE
                $(7)    FFVAL1              $(6)    FFVALS
                $(011)  BFA                 $(010)  BFE
                $(013)  FF2RS1              $(012)  FF1RS1
                $(015)  FF4RS1              $(014)  FF3RS1
                $(017)  FFSUMC              $(016)  FF5RS1
                $(021)  AREA                $(020)  NODE
FFROW           $(1)    060426 060875       $(0)    120573 120771
                $(3)    FFDAT1              $(2)    BLANK$COMMON
                $(5)    FFVALS              $(4)    FFSHDC
                $(7)    BFE                 $(6)    FFVAL1
                $(011)  FF1RS1              $(010)  BFA
                $(013)  FF3RS1              $(012)  FF2RS1
                $(015)  FF5RS1              $(014)  FF4RS1
                $(017)  NODE                $(016)  FFSUMC
                $(021)  CCONST              $(020)  TITLE
                $(023)  AREA                $(022)  RMASS1
                $(025)  FFSHO               $(024)  TAPE
                                            $(026)  RSTRT
FFRSUM          $(1)    060676 061010       $(0)    120772 121206
                $(3)    CCONST              $(2)    BLANK$COMMON
                $(5)    NODE                $(4)    FFDAT1
                $(7)    TAPE                $(6)    RMASS1
                $(011)  FFSHO               $(010)  AREA
```

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                $(013)  FFVALS          $(012)  FFSHDC
                $(015)  BFE             $(014)  FFVALI
                $(017)  FF1RSI          $(016)  BFA
                $(021)  FF3RSI          $(020)  FF2RSI
                $(023)  FF5RSI          $(022)  FF4RSI
                                        $(024)  FFSUMC
FFSF            $(1)    061011 061043   $(0)    121207 121214
                $(3)    FFDATI          $(2)    BLANK$COMMON
                $(5)    BFA             $(4)    BFE
                $(7)    FFVALI          $(6)    AREA
                                        $(010)  FFVALS
FFPRE           $(1)    061044 061105   $(0)    121215 121223
                $(3)    CCONST          $(2)    BLANK$COMMON
                $(5)    FFSHDC          $(4)    FFDATI
                $(7)    FFVALI          $(6)    FFVALS
                $(011)  BFA             $(010)  BFE
                $(013)  FF2RSI          $(012)  FF1RSI
                $(015)  FF4RSI          $(014)  FF3RSI
                $(017)  FFSUMC          $(016)  FF5RSI
                $(021)  AREA            $(020)  NODE
                $(023)  RMASSI          $(022)  TAPE
FFOUT           $(1)    061106 061216   $(0)    121224 121242
                $(3)    FFEQ            $(2)    BLANK$COMMON
                $(5)    CCONST          $(4)    AREA
                $(7)    NODE            $(6)    FFDATI
                $(011)  RSTRT           $(010)  TAPE
                $(013)  FFVALS          $(012)  FFSHDC
                $(015)  BFE             $(014)  FFVALI
                $(017)  FF1RSI          $(016)  BFA
                $(021)  FF3RSI          $(020)  FF2RSI
                $(023)  FF5RSI          $(022)  FF4RSI
                                        $(024)  FFSUMC
FFRDRQ          $(1)    061217 061707   $(0)    121243 121333
                $(3)    AREA            $(2)    BLANK$COMMON
                $(5)    FFDATI          $(4)    CCONST
                $(7)    TAPE            $(6)    NODE
                $(011)  FFVALS          $(010)  FFSHDC
                $(013)  BFE             $(012)  FFVALI
                $(015)  FF1RSI          $(014)  BFA
                $(017)  FF3RSI          $(016)  FF2RSI
                $(021)  FF5RSI          $(020)  FF4RSI
                $(023)  RSTRT           $(022)  FFSUMC
FFRDIN          $(1)    061710 063242   $(0)    121334 121625
                $(3)    ALPH            $(2)    BLANK$COMMON
                $(5)    CCONST          $(4)    AREA
                $(7)    FFDATI          $(6)    EMISS
                $(011)  INDXN           $(010)  INDXS
                $(013)  RMASSI          $(012)  NODE
                $(015)  DIMS            $(014)  TAPE
                $(017)  TSTR            $(016)  DSTR
                $(021)  IKS             $(020)  IFS
                $(023)  PSH             $(022)  PR
                $(025)  FFVALS          $(024)  FFSHDC
                $(027)  BFE             $(026)  FFVALI
                $(031)  FF1RSI          $(030)  BFA
                $(033)  FF3RSI          $(032)  FF2RSI
                $(035)  FF5RSI          $(034)  FF4RSI
```

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                    $(037)  ISTPDR              $(036)  FFSUMC
                    $(041)  FFSHO               $(040)  TITLE
                                                $(042)  RSTRT
FFHEAD              $(1)    063243 063341       $(0)    121626 122161
                    $(3)    TAPE                $(2)    BLANK$COMMON
                                                $(4)    CCONST
CHKACC              $(1)    063342 063502       $(0)    122162 122277
                    $(3)    CCONST              $(2)    BLANK$COMMON
                    $(5)    TITLE               $(4)    TAPE
                                                $(6)    NMODIR
FFSHO(COMMONBLOCK)                                      122300 122301
FF5RSI(COMMONBLOCK)                                     122302 122302
FF4RSI(COMMONBLOCK)                                     122303 122303
FF3RSI(COMMONBLOCK)                                     122304 122304
FF2RSI(COMMONBLOCK)                                     122305 122305
FF1RSI(COMMONBLOCK)                                     122306 122306
RMASS2(COMMONBLOCK)                                     122307 122353
RMASS1(COMMONBLOCK)                                     122354 122420
FFDAT1(COMMONBLOCK)                                     122421 122435
FFMAIN              $(1)    063503 064105       $(0)    122438 122571
                    $(3)    AREA                $(2)    BLANK$COMMON
                    $(5)    FFDAT1              $(4)    CCONST
                    $(7)    INDXN               $(6)    INDXS
                    $(011)  RMASS1              $(010)  NODE
                    $(013)  DIMS                $(012)  RMASS2
                    $(015)  TSTR                $(014)  DSTR
                    $(017)  IKS                 $(016)  IFS
                    $(021)  PSM                 $(020)  PR
                    $(023)  FFSHDC              $(022)  TAPE
                    $(025)  FFVAL1              $(024)  FFVALS
                    $(027)  BFA                 $(026)  BFE
                    $(031)  FF2RSI              $(030)  FF1RSI
                    $(033)  FF4RSI              $(032)  FF3RSI
                    $(035)  FFSUMC              $(034)  FF5RSI
                    $(037)  RSTRT               $(036)  TITLE
                    $(041)  FFSHO               $(040)  FFEQ
FFEQ(COMMONBLOCK)                                       122572 122614
FFSUMC(COMMONBLOCK)                                     122615 122637
FFSHDC(COMMONBLOCK)                                     122640 122662
FFRSI5(COMMONBLOCK)                                     122663 122663
FFRSI4(COMMONBLOCK)                                     122664 122664
FFRSI3(COMMONBLOCK)                                     122665 122665
FFRSI2(COMMONBLOCK)                                     122666 122666
FFRSI1(COMMONBLOCK)                                     122667 122667
BFA(COMMONBLOCK)                                        122670 122712
BFE(COMMONBLOCK)                                        122713 122735
FFVALS(COMMONBLOCK)                                     122736 122760
FFVAL1(COMMONBLOCK)                                     122761 123003
FFPROG              $(1)    064106 064120       $(0)    123004 123007
                    $(3)    FFVAL1              $(2)    BLANK$COMMON
                    $(5)    BFE                 $(4)    FFVALS
                    $(7)    FFRSI1              $(6)    BFA
                    $(011)  FFRSI3              $(010)  FFRSI2
                    $(013)  FFRSI5              $(012)  FFRSI4
                    $(015)  FFSUMC              $(014)  FFSHDC
                                                $(016)  FFEQ
```

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SEGMENT SF*            030881 043643     104535 116121
FOLLOWS SEGMENT TR

SFGTST                 $(1)    030661 030725     $(0)    104535 104545
                                                 $(2)    BLANK$COMMON
SFELSL                 $(1)    030726 031505     $(0)    104546 104612
                       $(3)    CCONST            $(2)    BLANK$COMMON
SFTRS3                 $(1)    031506 031566     $(0)    104613 104621
                                                 $(2)    BLANK$COMMON
SFSHAD                 $(1)    031567 035141     $(0)    104622 104762
                       $(3)    CCONST            $(2)    BLANK$COMMON
                       $(5)    SFQDS             $(4)    SFSHDC
                       $(7)    SFQDP             $(6)    SFQDR
                       $(011)  DSTR              $(010)  DIMS
                       $(013)  IFS               $(012)  TSTR
                       $(015)  PR                $(014)  IKS
                       $(017)  SFVECC            $(016)  PSH
SFPSHS                 $(1)    035142 035511     $(0)    104763 105054
                       $(3)    DIMS              $(2)    BLANK$COMMON
                       $(5)    TSTR              $(4)    DSTR
                       $(7)    IKS               $(6)    IFS
                       $(011)  PSH               $(010)  PR
                       $(013)  SFQDS             $(012)  SFSHDC
                       $(015)  SFQDP             $(014)  SFQDR
SFELEM                 $(1)    035512 037627     $(0)    105055 105200
                       $(3)    SFVECC            $(2)    BLANK$COMMON
                       $(5)    TAPE              $(4)    CCONST
SFELAV                 $(1)    037627 040366     $(0)    105201 105257
                       $(3)    CCONST            $(2)    BLANK$COMMON
                                                 $(4)    SFVECC
SFELMT                 $(1)    040367 040546     $(0)    105260 105276
                       $(3)    CCONST            $(2)    BLANK$COMMON
                                                 $(4)    SFSUR1
SFRDRQ                 $(1)    040547 040712     $(0)    105277 105803
                       $(3)    CCONST            $(2)    BLANK$COMMON
                       $(5)    ORBIT             $(4)    NODE
                                                 $(6)    TAPE
SFPRTR                 $(1)    040713 041124     $(0)    105604 105735
                       $(3)    CCONST            $(2)    BLANK$COMMON
                       $(5)    NODE              $(4)    TAPE
                                                 $(8)    TITLE
SFRDIN                 $(1)    041125 042370     $(0)    105736 106035
                       $(3)    NODE              $(2)    BLANK$COMMON
                       $(5)    SFQDS             $(4)    SFSHDC
                       $(7)    SFQDP             $(6)    SFQDR
                       $(011)  INDXN             $(010)  INDXS
                       $(013)  CCONST            $(012)  ORBIT
                       $(015)  DIMS              $(014)  SFSUR1
                       $(017)  TSTR              $(016)  DSTR
                       $(021)  IKS               $(020)  IFS
                       $(023)  PSH               $(022)  PR
                       $(025)  TITLE             $(024)  TAPE
                       $(027)  RSTRT             $(026)  ISTPDR
SFVECC(COMMONBLOCK)                                      106036 113732
SFSUR1(COMMONBLOCK)                                      113733 113777
SFMAIN                 $(1)    042371 043630     $(0)    114000 116001
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                    $(3)    RSTRT                $(2)    BLANK$COMMON
                    $(5)    AREA                 $(4)    ORBIT
                    $(7)    INDXS                $(6)    CCONST
                    $(011)  ISTPDR               $(010)  INDXN
                    $(013)  SFSUR1               $(012)  NODE
                    $(015)  TITLE                $(014)  TAPE
                                                 $(016)  SFVECC
                                                         116002 116024
SFQDS(COMMONBLOCK)                                       116025 116047
SFQDR(COMMONBLOCK)                                       116050 116072
SFQDP(COMMONBLOCK)                                       116073 116115
SFSHDC(COMMONBLOCK)
SFPROG              $(1)    043631 043643        $(0)    116116 116121
                    $(3)    SFSHDC               $(2)    BLANK$COMMON
                    $(5)    SFQDR                $(4)    SFQDP
                                                 $(6)    SFQDS

        SEGMENT NP*             030661 051266        104535 111024
        FOLLOWS SEGMENT TR

ALOG$/FOR-E3        $(1)    030661 030777        $(2)    104535 104575
NVECZ               $(1)    031000 031025        $(0)    104576 104577
VECTZ               $(1)    031026 031571        $(0)    104600 104742
                                                 $(2)    BLANK$COMMON
PUTCZZ              $(1)    031572 031610
GETCZZ              $(1)    031611 031627
SCALZZ              $(1)    031630 032124        $(0)    104743 104763
                                                 $(2)    BLANK$COMMON
NFLNK$/LL1811       $(1)    032125 032272        $(0)    104764 105004
                    $(013)  DEPTH
VECSZZ              $(1)    032273 033560        $(0)    105005 105161
                                                 $(2)    BLANK$COMMON
YMODZ               $(1)    033561 033600        $(0)    105162 105170
                                                 $(2)    BLANK$COMMON
XMODZ               $(1)    033601 033620        $(0)    105171 105177
                                                 $(2)    BLANK$COMMON
UNSCZZ              $(1)    033621 034004        $(0)    105200 105214
                                                 $(2)    BLANK$COMMON
UNYMDZ              $(1)    034005 034025        $(0)    105215 105224
                                                 $(2)    BLANK$COMMON
UNXMDZ              $(1)    034026 034046        $(0)    105225 105234
                                                 $(2)    BLANK$COMMON
METAZZ              $(1)    034047 035243        $(0)    105235 105401
                                                 $(2)    BLANK$COMMON
OBJCTG              $(1)    035244 035620        $(0)    105402 105451
                                                 $(2)    BLANK$COMMON
SUBJEG              $(1)    035621 036216        $(0)    105452 105505
                                                 $(2)    BLANK$COMMON
PAGEG               $(1)    036217 036430        $(0)    105506 105565
                                                 $(2)    BLANK$COMMON
TEXTG               $(1)    036431 036544        $(0)    105566 105603
                                                 $(2)    BLANK$COMMON
LINESG              $(1)    036545 036704        $(0)    105604 105640
                                                 $(2)    BLANK$COMMON
RSETMG              $(1)    036705 037075        $(0)    105641 106210
                                                 $(2)    BLANK$COMMON
SETSMG              $(1)    037076 041241        $(0)    106211 106343
```

				$(2)	BLANK$COMMON
MODESG/NMC	$(1)	041242	041302	$(0)	106344 106353
				$(2)	BLANK$COMMON
LINE	$(1)	041303	041333	$(0)	106354 106368
	$(3)	IGS		$(2)	BLANK$COMMON
LINEOP	$(1)	041334	041363	$(0)	106367 106375
	$(3)	IGS		$(2)	BLANK$COMMON
NUMBER	$(1)	041364	041421	$(0)	106376 106415
	$(3)	IGS		$(2)	BLANK$COMMON
MAP	$(1)	041422	041506	$(0)	106416 106434
	$(3)	IGS		$(2)	BLANK$COMMON
NPDOTL	$(1)	041507	042023	$(0)	106435 106505
	$(3)	NCONST		$(2)	BLANK$COMMON
	$(5)	PLOT		$(4)	NPMASS
SETBEA	$(1)	042024	042046	$(0)	106508 106512
	$(3)	IGS		$(2)	BLANK$COMMON
NPFPLT	$(1)	042047	042301	$(0)	106513 106522
	$(3)	CAL280		$(2)	BLANK$COMMON
NPSCAL	$(1)	042302	042400	$(0)	106523 106542
	$(3)	CAL280		$(2)	BLANK$COMMON
NPINFO	$(1)	042401	042702	$(0)	106543 106720
	$(3)	CCONST		$(2)	BLANK$COMMON
	$(5)	TAPE		$(4)	NCONST
NPTPLT	$(1)	042703	043042	$(0)	106721 106735
	$(3)	NCONST		$(2)	BLANK$COMMON
				$(4)	NPMASS
NPAVEC	$(1)	043043	043551	$(0)	106736 106770
	$(3)	CCONST		$(2)	BLANK$COMMON
FRAME	$(1)	043552	043570	$(0)	106771 106776
	$(3)	IGS		$(2)	BLANK$COMMON
SYMBOL	$(1)	043571	043716	$(0)	106777 107040
	$(3)	IGS		$(2)	BLANK$COMMON
ABSBEA	$(1)	043717	043762	$(0)	107041 107053
	$(3)	IGS		$(2)	BLANK$COMMON
CHAROP	$(1)	043763	044057	$(0)	107054 107071
	$(3)	IGS		$(2)	BLANK$COMMON
ZNPMAX	$(1)	044060	044305	$(0)	107072 107223
	$(3)	MNP		$(2)	BLANK$COMMON
	$(5)	NODE		$(4)	NCONST
	$(7)	INDXS		$(6)	TAPE
	$(011)	CCONST		$(010)	INDXN
NPPARA	$(1)	044306	044755	$(0)	107224 107300
	$(3)	CCONST		$(2)	BLANK$COMMON
				$(4)	NPMASS
NPSPHE	$(1)	044756	045441	$(0)	107301 107355
	$(3)	CCONST		$(2)	BLANK$COMMON
				$(4)	NPMASS
NPCONE	$(1)	045442	045755	$(0)	107356 107433
	$(3)	CCONST		$(2)	BLANK$COMMON
	$(5)	PLOT		$(4)	NPMASS
NPCYLO	$(1)	045756	046237	$(0)	107434 107502
	$(3)	CCONST		$(2)	BLANK$COMMON
	$(5)	NPMASS		$(4)	NCONST
NPTRAP	$(1)	046240	046361	$(0)	107503 107521
	$(3)	NPMASS		$(2)	BLANK$COMMON
				$(4)	CCONST
NPDISC	$(1)	046362	046544	$(0)	107522 107551

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                    $(3)    CCONST                  $(2)    BLANK$COMMON
                                                    $(4)    NPMASS
NPRECT              $(1)    046545 046622           $(0)    107552 107584
                    $(3)    NPMASS                  $(2)    BLANK$COMMON
NPAXES              $(1)    046623 047075           $(0)    107565 107631
                    $(3)    NCONST                  $(2)    BLANK$COMMON
                                                    $(4)    NPMASS
NPROTA              $(1)    047076 047403           $(0)    107632 107727
                    $(3)    NCONST                  $(2)    BLANK$COMMON
                                                    $(4)    CCONST
NPCONV              $(1)    047404 050130           $(0)    107730 110040
                    $(3)    ARRAYS                  $(2)    BLANK$COMMON
                    $(5)    PLOT                    $(4)    MNP
                    $(7)    CCONST                  $(6)    NCONST
                    $(011)  TITLE                   $(010)  TAPE
INIT28              $(1)    050131 050225           $(0)    110041 110102
                    $(3)    TAPE                    $(2)    BLANK$COMMON
                    $(5)    IGS                     $(4)    PLOTTR
                                                            110103 110105
CAL280(COMMONBLOCK)                                         110108 110142
NPMASS(COMMONBLOCK)                                         110143 110201
NCONST(COMMONBLOCK)
NPMAIN              $(1)    050226 051253           $(0)    110202 110775
                    $(3)    CCONST                  $(2)    BLANK$COMMON
                    $(5)    NCONST                  $(4)    MNP
                    $(7)    TAPE                    $(6)    NPMASS
                    $(011)  AREA                    $(010)  NODE
                    $(013)  INDXS                   $(012)  PLOT
                    $(015)  TITLE                   $(014)  INDXN
                                                    $(016)  CAL280
                                                            110776 111020
MNP(COMMONBLOCK)
NPPROG              $(1)    051254 051266           $(0)    111021 111024
                    $(3)    MNP                     $(2)    BLANK$COMMON

          SEGMENT GB*               030661 037606     104535 107314
          FOLLOWS SEGMENT TR

WRITHT              $(1)    030661 031003           $(0)    104535 104556
                    $(3)    CCONST                  $(2)    BLANK$COMMON
                    $(5)    TITLE                   $(4)    TAPE
                    $(7)    ISTPOR                  $(6)    RSTRT
                                                    $(010)  ACCESS
GBRTI               $(1)    031004 031626           $(0)    104557 104741
                    $(3)    CCONST                  $(2)    BLANK$COMMON
                    $(5)    TITLE                   $(4)    TAPE
                    $(7)    ISTPOR                  $(6)    RSTRT
GBINVG              $(1)    031627 034700           $(0)    104742 105123
                    $(3)    CCONST                  $(2)    BLANK$COMMON
                    $(5)    XSPACE                  $(4)    TAPE
                    $(7)    NOROLO                  $(6)    NOROUP
                    $(011)  FA                      $(010)  BLOCK
                    $(013)  ISTPOR                  $(012)  SPACE
                    $(015)  RSTRT                   $(014)  TITLE
GBEND               $(1)    034701 034710           $(0)    105124 105127
                                                    $(2)    BLANK$COMMON
GBSCFA              $(1)    034711 035716           $(0)    105130 105365
                    $(3)    AREA                    $(2)    BLANK$COMMON
```
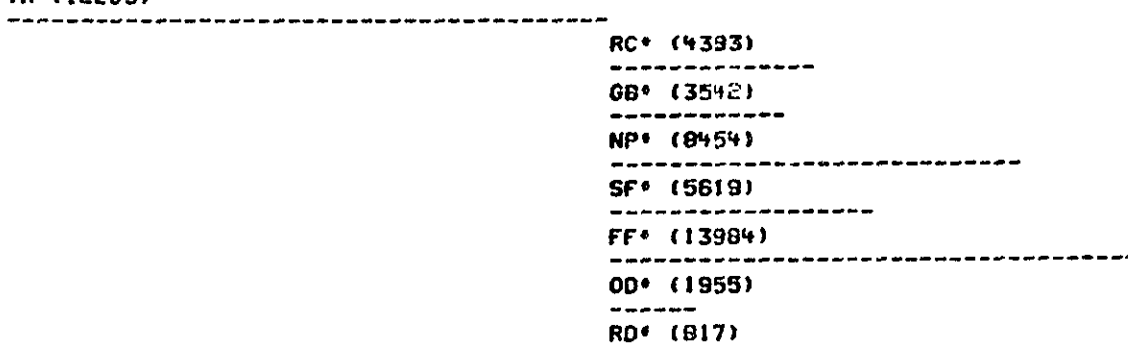

```
                    $(5)    EMISS           $(4)    ALPH
                    $(7)    SRSO            $(6)    SRIR
                    $(011)  TRSO            $(010)  TRIR
                    $(013)  CCONST          $(012)  BLKGB
                    $(015)  SPACE           $(014)  NODE
                    $(017)  TITLE           $(016)  TAPE
                    $(021)  ACCESS          $(020)  RSTRT
                    $(023)  XSPACE          $(022)  ISTPDR
                    $(025)  BLOCK           $(024)  FA
                    $(027)  NOROLO          $(026)  NOROUP
GBFFTP              $(1)    035717 036165   $(0)    105366 105525
                    $(3)    CCONST          $(2)    BLANK$COMMON
                    $(5)    TAPE            $(4)    TITLE
                                            $(6)    NMODIR
GBRSI               $(1)    036166 036727   $(0)    105526 105657
                    $(3)    CCONST          $(2)    BLANK$COMMON
                    $(5)    NODE            $(4)    TAPE
                    $(7)    RSTRT           $(6)    TITLE
                    $(011)  FA              $(010)  ACCESS
GBPRE               $(1)    036730 036737   $(0)    105660 105663
                                            $(2)    BLANK$COMMON
GBHEAD              $(1)    036740 036766   $(0)    105664 105740
                    $(3)    CCONST          $(2)    BLANK$COMMON
                                            $(4)    TAPE
NOROLO(COMMONBLOCK)                                 105741 106250
NOROUP(COMMONBLOCK)                                 106251 106560
BLOCK(COMMONBLOCK)                                  106561 106563
GBMAIN              $(1)    036767 037573   $(0)    106564 106721
                    $(3)    AREA            $(2)    BLANK$COMMON
                    $(5)    CCONST          $(4)    ALPH
                    $(7)    NOROUP          $(6)    BLOCK
                    $(011)  EMISS           $(010)  NOROLO
                    $(013)  SRIR            $(012)  NODE
                    $(015)  TRIR            $(014)  SRSO
                    $(017)  TAPE            $(016)  TRSO
                    $(021)  NSPEC           $(020)  TITLE
                    $(023)  ACCESS          $(022)  LNOSEQ
BLKGB(COMMONBLOCK)                                  106722 107217
XSPACE(COMMONBLOCK)                                 107220 107242
SPACE(COMMONBLOCK)                                  107243 107265
FA(COMMONBLOCK)                                     107266 107310
GBPROG              $(1)    037574 037606   $(0)    107311 107314
                    $(3)    FA              $(2)    BLANK$COMMON
                    $(5)    XSPACE          $(4)    SPACE
                                            $(6)    BLKGB

          SEGMENT RC*           030661 041331     104535 110752
          FOLLOWS SEGMENT TR

BTAPE(COMMONBLOCK)                                  104535 104537
RCBTP               $(1)    030661 031013   $(0)    104540 105235
                    $(3)    CCONST          $(2)    BLANK$COMMON
                    $(5)    ISTPDR          $(4)    TAPE
                                            $(6)    BTAPE
SORTDL              $(1)    031014 031422   $(0)    105236 105330
                                            $(2)    BLANK$COMMON
```

```
CLEAR           $(1)    031423 031445

RCEND           $(1)    031446 031455
                $(3)    CCONST
                $(5)    SPCNO

RCPRT           $(1)    031456 031681
                $(3)    RCSUM1

ENDTP           $(1)    031662 031764
                $(3)    CCONST

RCPNCH          $(1)    031765 032434
                $(3)    CCONST
                $(5)    RCEMIT
                $(7)    RCSUM1

RCPSS2          $(1)    032435 033547
                $(3)    CCONST
                $(5)    TITLE
                $(7)    RCEMIT
                $(011)  MSND
                $(013)  SFS
                $(015)  RCVAR
                $(017)  RCSUM2

RCPSS1          $(1)    033550 034447
                $(3)    CCONST
                $(5)    SPCNO
                $(7)    RCEMIT
                $(011)  ISPN
                $(013)  NDS

RCCMBN          $(1)    034450 035037
                $(3)    CCONST
                $(5)    TITLE
                $(7)    RCARET
                $(011)  MSND
                $(013)  ODTEMP
                $(015)  SPCNO

RCTRAN          $(1)    035040 037030
                $(3)    TAPE
                $(5)    NODE
                $(7)    SPCNO

RCINIT          $(1)    037031 037520
                $(3)    CCONST
                $(5)    TITLE
                $(7)    RCARET
                $(011)  MSND
                $(013)  NODE
                $(015)  EMISS

RCPRE           $(1)    037521 037530
                $(3)    CCONST
                $(5)    SPCNO

RCHEAD          $(1)    037531 037576
                $(3)    TAPE

                $(0)    105331 105335
                $(2)    BLANK$COMMON
                $(0)    105336 105341
                $(2)    BLANK$COMMON
                $(4)    NODE
                $(6)    TAPE
                $(0)    105342 105436
                $(2)    BLANK$COMMON
                $(4)    RCSUM2
                $(0)    105437 105532
                $(2)    BLANK$COMMON
                $(4)    TAPE
                $(0)    105533 105715
                $(2)    BLANK$COMMON
                $(4)    TAPE
                $(6)    RCARET
                $(010)  RCSUM2
                $(0)    105716 106043
                $(2)    BLANK$COMMON
                $(4)    TAPE
                $(6)    RCARET
                $(010)  ISPN
                $(012)  NDS
                $(014)  SPCNO
                $(016)  RCSUM1
                $(0)    106044 106160
                $(2)    BLANK$COMMON
                $(4)    TAPE
                $(6)    ODTEMP
                $(010)  RCARET
                $(012)  MSND
                $(0)    106161 106221
                $(2)    BLANK$COMMON
                $(4)    TAPE
                $(6)    RCEMIT
                $(010)  ISPN
                $(012)  NDS
                $(014)  SFS
                $(016)  RCVAR
                $(0)    106222 106443
                $(2)    BLANK$COMMON
                $(4)    TITLE
                $(6)    NDS
                $(0)    106444 106540
                $(2)    BLANK$COMMON
                $(4)    TAPE
                $(6)    RCEMIT
                $(010)  ISPN
                $(012)  NDS
                $(014)  AREA
                $(0)    106541 106544
                $(2)    BLANK$COMMON
                $(4)    NODE
                $(6)    TAPE
                $(0)    106545 107057
                $(2)    BLANK$COMMON
                $(4)    CCONST
```

```
RCVAR(COMMONBLOCK)                                                  107060 107060
RCMAIN                  $(1)    037577 041316       $(0)    107061 107430
                        $(3)    BLKRC               $(2)    BLANKSCOMMON
                        $(5)    TAPE                $(4)    CCONST
                        $(7)    ALPH                $(6)    NODE
                        $(011)  LNGSEG              $(010)  TITLE
                        $(013)  MSND                $(012)  ISPN
                        $(015)  SFS                 $(014)  ARRAYS
                        $(017)  NDS                 $(016)  SPCNO
                        $(021)  DIMS                $(020)  ODTEMP
                        $(023)  RCARET              $(022)  RCEMIT
                        $(025)  RCSUM1              $(024)  RCVAR
                                                    $(026)  RCSUM2
BLKRC(COMMONBLOCK)                                          107431 110224
RCSUM2(COMMONBLOCK)                                         110225 110247
RCSUM1(COMMONBLOCK)                                         110250 110272
RCARET(COMMONBLOCK)                                         110273 110316
RCEMIT(COMMONBLOCK)                                         110317 110342
SPCNO(COMMONBLOCK)                                          110343 110366
SFS(COMMONBLOCK)                                            110367 110412
NDS(COMMONBLOCK)                                            110413 110436
MSND(COMMONBLOCK)                                           110437 110602
ISPN(COMMONBLOCK)                                           110603 110746
RCPROG                  $(1)    041317 041331       $(0)    110747 110752
                        $(3)    ISPN                $(2)    BLANKSCOMMON
                        $(5)    NDS                 $(4)    MSND
                        $(7)    SPCNO               $(6)    SFS
                        $(011)  RCARET              $(010)  RCEMIT
                        $(013)  RCSUM2              $(012)  RCSUM1
                                                    $(014)  BLKRC
```

IBANK DRAWN TO SCALE: 300 WORDS DECIMAL PER DASH



DBANK DRAWN TO SCALE: 200 WORDS DECIMAL PER DASH

TR (7538)

```
                                        RC* (2190)
                                        ----------
                                        GB* (1392)
                                        -------
                                        MP* (2232)
                                        ----------
                                        SF* (4853)
                                        ----------
                                        FF* (7339)
                                        ----------
                                        OD* (636)
                                        ---
                                        RD* (477)
                                        ---

SYS$*RLIB$. LEVEL 72-8
END MAP


@COPY,GM 15,RSO
FURPUR 27R1 RL72-8 06/22/78 20:30:00
     3 BLOCKS COPIED.


@FREE 15


@COPY,A TRASYSP,RSO.
FURPUR 27R1 RL72-8 06/22/78 20:30:01
  1 ABS


@COPY,GM DIR,RSO
     1 BLOCK  COPIED.


@COPY,GM FFR,RSO
     1 BLOCK  COPIED.


@COPY,GM GBIRR,RSO
     1 BLOCK  COPIED.


@COPY,GM RIO,RSO
   120 BLOCKS COPIED.
```

```
@COPY,GM SQNTL,RSO
     1 BLOCK  COPIED.


@COPY,GM PLSR,RSO
     1 BLOCK  COPIED.


@COPY,GM TQR,RSO
     1 BLOCK  COPIED.


@TEST TE/0/S6
INTERVENING STATEMENTS SKIPPED


@TEST TE/1/S3
INTERVENING STATEMENTS SKIPPED


@JUMP L6
INTERVENING STATEMENTS SKIPPED


@L6:FREE ES3-TRASYS*LIBRYN.


@ASG,T DI.,F17/0/TRK/320


@ASG,T GBIR.,F17/0/TRK/320


@ASG,T GBSO.,F17/0/TRK/320


@ASG,T FF.,F17/0/POS/9


@ASG,T PLS.,F17/0/TRK/320


@ASG,T TQ.,F17/0/TRK/320
```

```
@ASG.T RARR.,F17/0/TRK/320

@ASG.T SCRR.,F17/0/POS/10

@USE 4,SCRR

@USE 9,FF

@USE 10,DI

@USE 11,GBIR

@USE 12,GBSO

@USE 13,PLS

@USE 14,MASS2

@USE 15,RSO

@USE 17,RTI

@USE 18,RTO

@USE 19,USER1

@USE 20,USER2

@USE 24,RARR
```

```
@USE 27.TQ


@USE 28.TRAJ


@USE 29.BCDOU


@ENABLE, *RSS
FURPUR 27R1 RL72-8 06/22/78 20:30:57
ES3-N03711*RSS(1)
   HAS NOT BEEN DISABLED


@XQT TRASYSP
```

NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
UNIVAC 1110/EXEC 8

PROCESSOR EXECUTION

VERSION.MODIFICATION UL2E6
MODIFICATION DATE 061978

DATE OF RUN 062278
TIME OF RUN 203529
JOB NUMBER RVMH01

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
PROCESSING OPERATIONS DATA

SEQUENCE	NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS----------
1	1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
6	12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
7	13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
8	14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
9	5	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT LID
10	15	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER LEFT LID
11	21	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
12	22	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
13	23	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
14	24	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
15	25	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
16	26	LIDOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACE OF LID

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER = 1)

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
NODE PLOTTER DATA OUTPUT

NODE PLOTTER

PARAMETER	DESCRIPTION	OPTION *.	DEFAULT
NV	VIEW NUMBER	1-6	1
IVU	VIEW	3HALL 3H3-D 1HX 1HY 1HZ 3HGEN	3HALL
SCL	SCALE FACTOR (3.15/LARGEST DISTANCE FROM CCS ORIGIN IN USER S UNITS)		AUTOMATIC SCALE
NACT	ACTIVE SIDE ARROW FLAG	YES , NO	NO
ISHO	SHADOWER-ONLY SURFACE PLOT FLAG	YES, NO	NO
ISELN	ARRAY NAME CONTAINING NUMBER OF NODES TO BE SELECTIVELY PLOTTED	ARRAY NAME	PLOTS ALL NODES
ITIT	ARRAY NAME OF PLOT TITLE	AY NAME	USES JOB TITLE
ROTX, ROTY, ROTZ,	VIEW ROTATIONS (FOR IVU = 3HGEN)	0 : ANG : 360	0.0 0.0 0.0
IROTX, IROTY, IROTZ	ORDER OF ROTATIONS (FOR IVU = 3HGEN)	1,2,3 (ANY ORDER)	1,2,3

*INPUT ZERO FOR DEFAULT ACTION

CALLING SEQUENCE-,

CALL NDATA (NV, IUV, SCL, NACT, ISHO ISELN, ITIT, ROTX, ROTY, ROTZ, IROTX, IROTY, IROTZ)

OR

CALL NDATAS (NV, IVU, SCL)

NOTE- IF NO CALLS TO NDATA/NDATAS ARE MADE, A CALL TO NPLOT WILL RESULT IN ALL VIEWS AUTOMATICALLY SCALED GENERATED FOR NODES.

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
NODE PLOTTER DATA OUTPUT

VIEW=3-D	SCALE= 1.2261	VIEW NUMBER=1
VIEW=Z-AXIS	SCALE= 1.2261	VIEW NUMBER=1
VIEW=X-AXIS	SCALE= 1.2261	VIEW NUMBER=1
VIEW=Y-AXIS	SCALE= 1.2261	VIEW NUMBER=1

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 1	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	.81	.64	.33	.11	.00	.00	.17	.67	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	.58	.42	.19	.08	.00	.00	.00	.03	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.19	.25	.17	.08	.00	.00	.00	.17	.61	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 1	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	.81	.64	.33	.11	.00	.00	.17	.67	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	.58	.42	.19	.08	.00	.00	.00	.03	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.19	.25	.17	.08	.00	.00	.00	.17	.61	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 2	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.17	.33	.44	.56	.58	.61	22.5
	.42	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.42	.64	.61	.58	.42	45.0
	.19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.61	.42	.25	.22	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 2	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.17	.33	.44	.58	.58	.61	22.5
	.42	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.42	.64	.61	.58	.42	45.0
	.19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.61	.42	.25	.22	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 3	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.06	.08	.03	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.81	.53	.31	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.33	.83	1.00	1.00	45.0
	.33	.42	.31	.25	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.25	.72	.50	.50	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 3	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.06	.08	.03	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.81	.53	.31	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.33	.83	1.00	1.00	45.0
	.33	.42	.31	.25	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.25	.72	.50	.50	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

NODE 4	CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.
SOLAR SHADOW TABLE																			CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.67	.56	.36	.39	.39	.28	.11	.00	.00	.00	.00	.00	.00	.17	.33	.50	.50	.67	.67 22.5
	.00	.00	.06	.08	.00	.00	.06	.00	.00	.00	.00	.00	.03	.28	.64	.50	.17	.00	.00 45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 180.0

NODE 4	CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.
INFRA RED SHADOW TABLE																			CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.67	.56	.36	.39	.39	.28	.11	.00	.00	.00	.00	.00	.00	.17	.33	.50	.50	.67	.67 22.5
	.00	.00	.06	.08	.00	.00	.06	.00	.00	.00	.00	.00	.03	.28	.64	.50	.17	.00	.00 45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00 180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 11	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	1.00	.67	.17	.00	.00	.11	.33	.64	.81	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	1.00	.03	.00	.00	.00	.06	.19	.42	.58	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.61	.17	.00	.00	.00	.08	.17	.25	.19	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 11	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	1.00	.67	.17	.00	.00	.11	.33	.64	.81	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	1.00	.03	.00	.00	.00	.06	.19	.42	.58	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.61	.17	.00	.00	.00	.08	.17	.25	.19	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 12	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.58	.56	.44	.33	.17	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.61	22.5
	.42	.58	.61	.64	.42	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42	45.0
	.19	.22	.25	.42	.61	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 12	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.58	.56	.44	.33	.17	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.61	22.5
	.42	.58	.61	.64	.42	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42	45.0
	.19	.22	.25	.42	.61	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/OBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 13	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	CONE ANGLE
SOLAR SHADOW TABLE																				
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.03	.08	.06	.00	22.5
	1.00	1.00	.83	.33	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.31	.53	.81	1.00	45.0
	.33	.50	.50	.72	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.25	.31	.42	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 13	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	CONE ANGLE
INFRA RED SHADOW TABLE																				
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.03	.08	.06	.00	22.5
	1.00	1.00	.83	.33	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.31	.53	.81	1.00	45.0
	.33	.50	.50	.72	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.25	.31	.42	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 14	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.67	.67	.50	.50	.33	.17	.00	.00	.00	.00	.00	.00	.11	.28	.39	.39	.36	.56	.67	22.5
	.00	.00	.17	.50	.64	.28	.03	.00	.00	.00	.00	.00	.06	.00	.00	.08	.06	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 14	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.67	.67	.50	.50	.33	.17	.00	.00	.00	.00	.00	.00	.11	.28	.39	.39	.36	.56	.67	22.5
	.00	.00	.17	.50	.64	.28	.03	.00	.00	.00	.00	.00	.06	.00	.00	.08	.06	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - MPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 5	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.56	.67	.67	.72	.72	.00	.00	.00	.00	.00	.00	.00	.14	.14	.33	.50	.50	.67	112.5
	.33	.39	.33	.31	.33	.33	.31	.22	.11	.00	.00	.00	.00	.00	.00	.00	.17	.33	.33	135.0
	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 5	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.56	.67	.67	.72	.72	.00	.00	.00	.00	.00	.00	.00	.14	.14	.33	.50	.50	.67	112.5
	.33	.39	.33	.31	.33	.33	.31	.22	.11	.00	.00	.00	.00	.00	.00	.00	.17	.33	.33	135.0
	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

NODE 15	CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.50	.50	.33	.14	.14	.00	.00	.00	.00	.00	.00	.00	.72	.72	.67	.67	.56	.67	112.5
	.33	.33	.17	.00	.00	.00	.00	.00	.00	.00	.11	.22	.31	.33	.33	.31	.33	.39	.33	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

NODE 15	CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.50	.50	.33	.14	.14	.00	.00	.00	.00	.00	.00	.00	.72	.72	.67	.67	.56	.67	112.5
	.33	.33	.17	.00	.00	.00	.00	.00	.00	.00	.11	.22	.31	.33	.33	.31	.33	.39	.33	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

NODE 21 CLOCK ANGLE 0. 20. 40. 60. 80. 100. 120. 140. 160. 180. 200. 220. 240. 260. 280. 300. 320. 340. 360.

SOLAR SHADOW TABLE

																			CONE ANGLE
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	45.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

NODE 21 CLOCK ANGLE 0. 20. 40. 60. 80. 100. 120. 140. 160. 180. 200. 220. 240. 260. 280. 300. 320. 340. 360.

INFRA RED SHADOW TABLE

																			CONE ANGLE
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	45.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 22	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 22	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 23	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 23	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 24	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 24	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

NODE 25	CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

NODE 25	CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

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MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
SHADOW FACTOR GENERATOR LINK

NODE 26	CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

NODE 28	CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

SHADOW FACTORS FOR CONFIGURATION CASE1 HAVE BEEN STORED ON RSO.
LAST RECORD WRITTEN = 52

TOTAL TIME FOR SHADOW FACTOR TABLES 46.4

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	.1-05	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
*FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	NO	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

* -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

SEQUENCE	NODE	AREA	ALPH	EMISS
1	1	1.00000	.900	.900
2	2	1.00000	.900	.900
3	3	1.00000	.900	.900
4	4	1.00000	.900	.900
5	11	1.00000	.900	.900
6	12	1.00000	.900	.900
7	13	1.00000	.900	.900
8	14	1.00000	.900	.900
9	5	1.00000	.900	.900
10	15	1.00000	.900	.900
11	21	2.06040	.200	.900
12	22	2.06040	.200	.900
13	23	1.04040	.200	.900
14	24	2.06040	.200	.900
15	25	1.04040	.200	.900
16	26	2.06040	.200	.900

NUMBER OF NODES = 16 NUMBER OF SURFACES = 10

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
1	2	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	16.359	1108	1108	*
1	3	CAL	.201522	.201522	.201522	.201522	.201522	1.000000	1.000000	.417	36	36	
1	4	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	16.418	1108	1108	*
1	12	CAL	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.231	36	36	
1	13	CAL	.086058	.086058	.086058	.086058	.086058	1.000000	1.000000	.290	36	36	
1	14	CAL	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	16.627	1024	1024	*
1	5	CAL	.137203	.137203	.137203	.137203	.137203	1.000000	1.000000	.436	36	36	
1	15	CAL	.056006	.056006	.056006	.056006	.056006	1.000000	1.000000	.235	36	36	
1	FF SUM = .9690		ROW CP TIME = 51.084										
	FORM FACTOR RESTART (RSO) RECORD = 56												
2	3	EQUIV	.207379	.207379	.207379	.207379	.000000	1.000000	1.000000	.005	0	0	
2	4	EQUIV	.207379	.207379	.207379	.207379	.000000	1.000000	1.000000	.001	0	0	
2	11	EQUIV	.032922	.032922	.032922	.032922	.000000	.000000	.000000	.001	0	0	
2	12	CAL	.068832	.068832	.068832	.068832	.068832	1.000000	1.000000	.265	36	36	
2	13	CAL	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.218	36	36	
2	14	CAL	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.234	36	36	
2	5	CAL	.096343	.096343	.096343	.096343	.096343	1.000000	1.000000	15.431	1029	1029	*
2	15	CAL	.034262	.034262	.034262	.034262	.034262	1.000000	1.000000	.223	36	36	
2	FF SUM = .9203		ROW CP TIME = 16.445										
	FORM FACTOR RESTART (RSO) RECORD = 57												
3	4	EQUIV	.207379	.207379	.207379	.207379	.000000	1.000000	1.000000	.004	0	0	
3	11	EQUIV	.086058	.086058	.086058	.086058	.000000	.000000	.000000	.001	0	0	
3	12	EQUIV	.032922	.032922	.032922	.032922	.000000	1.000000	1.000000	.003	0	0	
3	14	CAL	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	16.246	1024	1024	*
3	5	CAL	.050426	.050426	.050426	.050426	.050426	1.000000	1.000000	15.560	1024	1024	*
3	15	CAL	.011660	.011660	.011660	.011660	.011660	1.000000	1.000000	15.634	1024	1024	*
3	FF SUM = .8378		ROW CP TIME = 47.510										

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) NO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
	FORM FACTOR RESTART (RSO) RECORD = 58											
4	11	EQUIV	.040501	.040501	.040501	.040501	.000000	.000000	.000000	.004	0	0
4	12	EQUIV	.032922	.032922	.032922	.032922	.000000	1.000000	1.000000	.004	0	0
4	13	EQUIV	.040501	.040501	.040501	.040501	.000000	1.000000	1.000000	.005	0	0
4	5	CAL	.107798	.107798	.107798	.107798	.107798	1.000000	1.000000	.290	36	36
4	15	CAL	.056851	.056851	.056851	.056851	.056851	1.000000	1.000000	.233	36	36
4	FF SUM = .9007		ROW CP TIME = .588									
	FORM FACTOR RESTART (RSO) RECORD = 59											
11	12	EQUIV	.207379	.207379	.207379	.207379	.000000	1.000000	1.000000	.004	0	0
11	13	EQUIV	.201522	.201522	.201522	.201522	.000000	1.000000	1.000000	.001	0	0
11	14	EQUIV	.207379	.207379	.207379	.207379	.000000	1.000000	1.000000	.001	0	0
11	5	EQUIV	.056006	.056006	.056006	.056006	.000000	1.000000	1.000000	.001	0	0
11	15	EQUIV	.137203	.137203	.137203	.137203	.000000	1.000000	1.000000	.001	0	0
11	FF SUM = .9690		ROW CP TIME = .052									
	FORM FACTOR RESTART (RSO) RECORD = 60											
12	13	EQUIV	.207379	.207379	.207379	.207379	.000000	1.000000	1.000000	.005	0	0
12	14	EQUIV	.207379	.207379	.207379	.207379	.000000	1.000000	1.000000	.001	0	0
12	5	EQUIV	.034262	.034262	.034262	.034262	.000000	1.000000	1.000000	.001	0	0
12	15	EQUIV	.096343	.096343	.096343	.096343	.000000	1.000000	1.000000	.001	0	0
12	FF SUM = .9203		ROW CP TIME = .049									
	FORM FACTOR RESTART (RSO) RECORD = 61											
13	14	EQUIV	.207379	.207379	.207379	.207379	.000000	1.000000	1.000000	.003	0	0
13	5	EQUIV	.011660	.011660	.011660	.011660	.000000	1.000000	1.000000	.001	0	0
13	15	EQUIV	.050426	.050426	.050426	.050426	.000000	1.000000	1.000000	.001	0	0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
13	FF SUM = .8378	ROW CP TIME = .077										
	FORM FACTOR RESTART (RSO) RECORD = 62											
14	5	EQUIV	.056851	.056851	.056851	.056851	.000000	1.000000	1.000000	.004	0	0
14	15	EQUIV	.107798	.107798	.107798	.107798	.000000	1.000000	1.000000	.002	0	0
14	FF SUM = .9007	ROW CP TIME = .033										
	FORM FACTOR RESTART (RSO) RECORD = 63											
5	FF SUM = .5505	ROW CP TIME = .014										
	FORM FACTOR RESTART (RSO) RECORD = 64											
15	FF SUM = .5505	ROW CP TIME = .012										
	FORM FACTOR RESTART (RSO) RECORD = 65											
21	FF SUM = .0000	ROW CP TIME = .009										
	FORM FACTOR RESTART (RSO) RECORD = 66											
22	FF SUM = .0000	ROW CP TIME = .010										

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

(° -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION NODE BECAUSE OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ

FORM FACTOR RESTART (RSO) RECORD = 67

23 FF SUM = .0000 ROW CP TIME = .007
FORM FACTOR RESTART (RSO) RECORD = 68

24 FF SUM = .0000 ROW CP TIME = .011
FORM FACTOR RESTART (RSO) RECORD = 69

25 FF SUM = .0000 ROW CP TIME = .007
FORM FACTOR RESTART (RSO) RECORD = 70

26 FF SUM = .0000 ROW CP TIME = .006
FORM FACTOR RESTART (RSO) RECORD = 71

FF FORM FACTORS FOR CONFIGURATION CASE1 HAVE BEEN STORED ON RSO.
LAST RESTART RECORD WRITTEN = 71

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM
1- .9690	2- .9203	3- .8378	4- .9007	11- .9690	12- .9203
13- .8378	14- .9007	5- .5505	15- .5505	21- .0000	22- .0000
23- .0000	24- .0000	25- .0000	26- .0000		

TOTAL TIME FOR FORM FACTOR SEGMENT 116.634

TOTAL TIME SINCE START OF RUN 215.549

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBWBND	BOTH	BOTH	WAVEBAND DEFINITION PARAMETER	(2HIR,3HSOL,4HBOTH)

IR GRAY BODIES FOR CONFIGURATION CASE1 HAVE BEEN COMPUTED AND STORED ON RSO.
LAST RESTART RECORD WRITTEN = 89

SOL GRAY BODIES FOR CONFIGURATION CASE1 HAVE BEEN COMPUTED AND STORED ON RSO.
LAST RESTART RECORD WRITTEN = 107

TOTAL TIME TO COMPUTE GRAY BODIES .83

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	SPACE	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	999	32767	SPACE NODE ID NUMBER	N/A
SIGMA	.17-08	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	.7+00	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	.990	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	0	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
RADIATION CONDUCTOR GENERATION LINK.

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY SECONDARY

NONE

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADKS) CARDS

AREA UNITS * INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED AND/OR BCDOU RADKS -	-	1.	1.	2.	.30388-09$
PUNCHED AND/OR BCDOU RADKS -	-	2.	1.	3.	.29434-09$
PUNCHED AND/OR BCDOU RADKS -	-	3.	1.	4.	.30399-09$
PUNCHED AND/OR BCDOU RADKS -	-	4.	1.	11.	.12030-10$
PUNCHED AND/OR BCDOU RADKS -	-	5.	1.	12.	.55485-10$
PUNCHED AND/OR BCDOU RADKS -	-	6.	1.	13.	.12522-09$
PUNCHED AND/OR BCDOU RADKS -	-	7.	1.	14.	.64507-10$
PUNCHED AND/OR BCDOU RADKS -	-	8.	1.	5.	.19915-09$
PUNCHED AND/OR BCDOU RADKS -	-	9.	1.	15.	.82979-10$
PUNCHED AND/OR BCDOU RADKS -	-	10.	2.	3.	.30243-09$
PUNCHED AND/OR BCDOU RADKS -	-	11.	2.	4.	.30341-09$
PUNCHED AND/OR BCDOU RADKS -	-	12.	2.	11.	.55485-10$
PUNCHED AND/OR BCDOU RADKS -	-	13.	2.	12.	.10306-09$
PUNCHED AND/OR BCDOU RADKS -	-	14.	2.	13.	.54412-10$
PUNCHED AND/OR BCDOU RADKS -	-	15.	2.	14.	.54024-10$
PUNCHED AND/OR BCDOU RADKS -	-	16.	2.	5.	.14389-09$
PUNCHED AND/OR BCDOU RADKS -	-	17.	2.	15.	.54005-10$
PUNCHED AND/OR BCDOU RADKS -	-	18.	3.	4.	.30228-09$
PUNCHED AND/OR BCDOU RADKS -	-	19.	3.	11.	.12522-09$
PUNCHED AND/OR BCDOU RADKS -	-	20.	3.	12.	.54412-10$
PUNCHED AND/OR BCDOU RADKS -	-	21.	3.	13.	.89279-11$
PUNCHED AND/OR BCDOU RADKS -	-	22.	3.	14.	.63116-10$
PUNCHED AND/OR BCDOU RADKS -	-	23.	3.	5.	.81540-10$
PUNCHED AND/OR BCDOU RADKS -	-	24.	3.	15.	.23578-10$
PUNCHED AND/OR BCDOU RADKS -	-	25.	4.	11.	.64507-10$
PUNCHED AND/OR BCDOU RADKS -	-	26.	4.	12.	.54024-10$
PUNCHED AND/OR BCDOU RADKS -	-	27.	4.	13.	.63116-10$
PUNCHED AND/OR BCDOU RADKS -	-	28.	4.	14.	.90305-11$
PUNCHED AND/OR BCDOU RADKS -	-	29.	4.	5.	.15910-09$
PUNCHED AND/OR BCDOU RADKS -	-	30.	4.	15.	.83921-10$
PUNCHED AND/OR BCDOU RADKS -	-	31.	11.	12.	.30388-09$
PUNCHED AND/OR BCDOU RADKS -	-	32.	11.	13.	.29434-09$
PUNCHED AND/OR BCDOU RADKS -	-	33.	11.	14.	.30399-09$
PUNCHED AND/OR BCDOU RADKS -	-	34.	11.	5.	.82979-10$
PUNCHED AND/OR BCDOU RADKS -	-	35.	11.	15.	.19915-09$
PUNCHED AND/OR BCDOU RADKS -	-	36.	12.	13.	.30243-09$
PUNCHED AND/OR BCDOU RADKS -	-	37.	12.	14.	.30341-09$
PUNCHED AND/OR BCDOU RADKS -	-	38.	12.	5.	.54005-10$
PUNCHED AND/OR BCDOU RADKS -	-	39.	12.	15.	.14389-09$
PUNCHED AND/OR BCDOU RADKS -	-	40.	13.	14.	.30228-09$

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADK) CARDS

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

```
PUNCHED AND/OR BCDOU RADKS -          -   41.   13.    5.   .23578-10$
PUNCHED AND/OR BCDOU RADKS -          -   42.   13.   15.   .81540-10$
PUNCHED AND/OR BCDOU RADKS -          -   43.   14.    5.   .83921-10$
PUNCHED AND/OR BCDOU RADKS -          -   44.   14.   15.   .15910-09$
PUNCHED AND/OR BCDOU RADKS -          -   45.    5.   15.   .52902-11$
PUNCHED AND/OR BCDOU RADKS -          -   46.    1.  999.   .76855-10$
PUNCHED AND/OR BCDOU RADKS -          -   47.    2.  999.   .14541-09$
PUNCHED AND/OR BCDOU RADKS -          -   48.    3.  999.   .26442-09$
PUNCHED AND/OR BCDOU RADKS -          -   49.    4.  999.   .17657-09$
PUNCHED AND/OR BCDOU RADKS -          -   50.   11.  999.   .76855-10$
PUNCHED AND/OR BCDOU RADKS -          -   51.   12.  999.   .14541-09$
PUNCHED AND/OR BCDOU RADKS -          -   52.   13.  999.   .26442-09$
PUNCHED AND/OR BCDOU RADKS -          -   53.   14.  999.   .17657-09$
PUNCHED AND/OR BCDOU RADKS -          -   54.    5.  999.   .70085-09$
PUNCHED AND/OR BCDOU RADKS -          -   55.   15.  999.   .70085-09$
PUNCHED AND/OR BCDOU RADKS -          -   56.   21.  999.   .31765-08$
PUNCHED AND/OR BCDOU RADKS -          -   57.   22.  999.   .31765-08$
PUNCHED AND/OR BCDOU RADKS -          -   58.   23.  999.   .16040-08$
PUNCHED AND/OR BCDOU RADKS -          -   59.   24.  999.   .31765-08$
PUNCHED AND/OR BCDOU RADKS -          -   60.   25.  999.   .16040-08$
PUNCHED AND/OR BCDOU RADKS -          -   61.   26.  999.   .31765-08$
```

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
RADIATION CONDUCTOR GENERATION LINK.

CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE BEFORE RKMIN SCREENING

1 -	.10000+01	2 -	.10000+01	3 -	.10000+01	4 -	.10000+01	11 -	.10000+01	12 -	.10000+01
13 -	.10000+01	14 -	.10000+01	5 -	.10000+01	15 -	.10000+01	21 -	.10000+01	22 -	.10000+01
23 -	.10000+01	24 -	.10000+01	25 -	.10000+01	26 -	.10000+01				

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN
RADIATION CONDUCTOR GENERATION LINK.

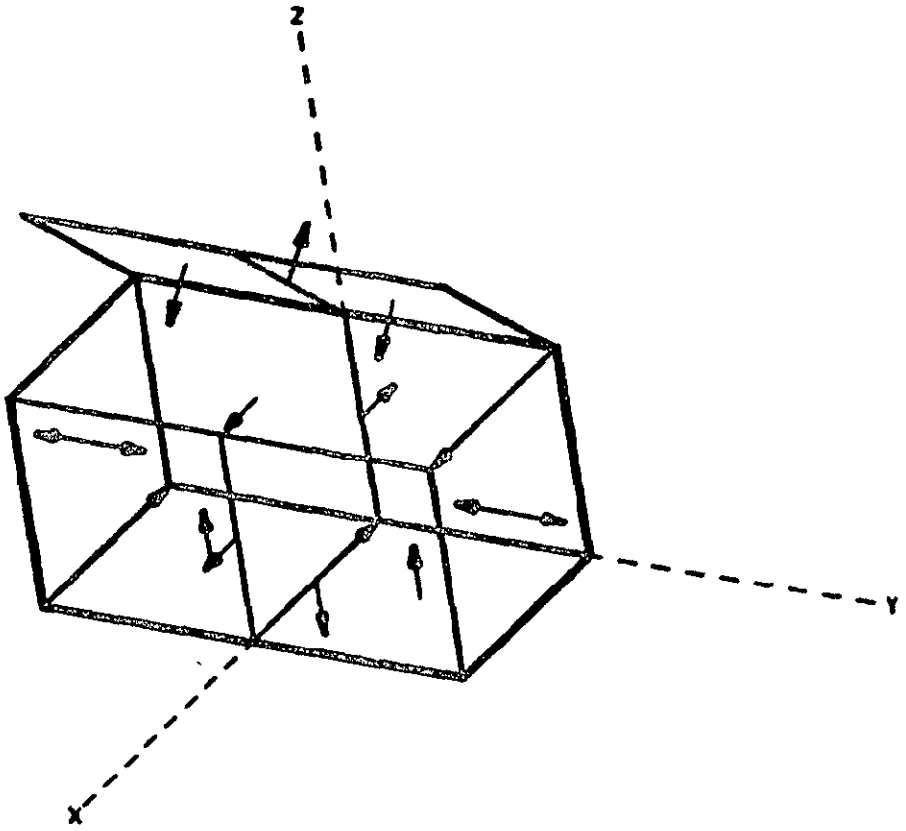
CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE AFTER RKMIN SCREENING

1 -	.10000+01	2 -	.10000+01	3 -	.10000+01	4 -	.10000+01	11 -	.10000+01	12 -	.10000+01
13 -	.10000+01	14 -	.10000+01	5 -	.10000+01	15 -	.10000+01	21 -	.10000+01	22 -	.10000+01
23 -	.10000+01	24 -	.10000+01	25 -	.10000+01	26 -	.10000+01				

TOTAL TIME TO COMPUTE AND CONDENSE RADKS = .65

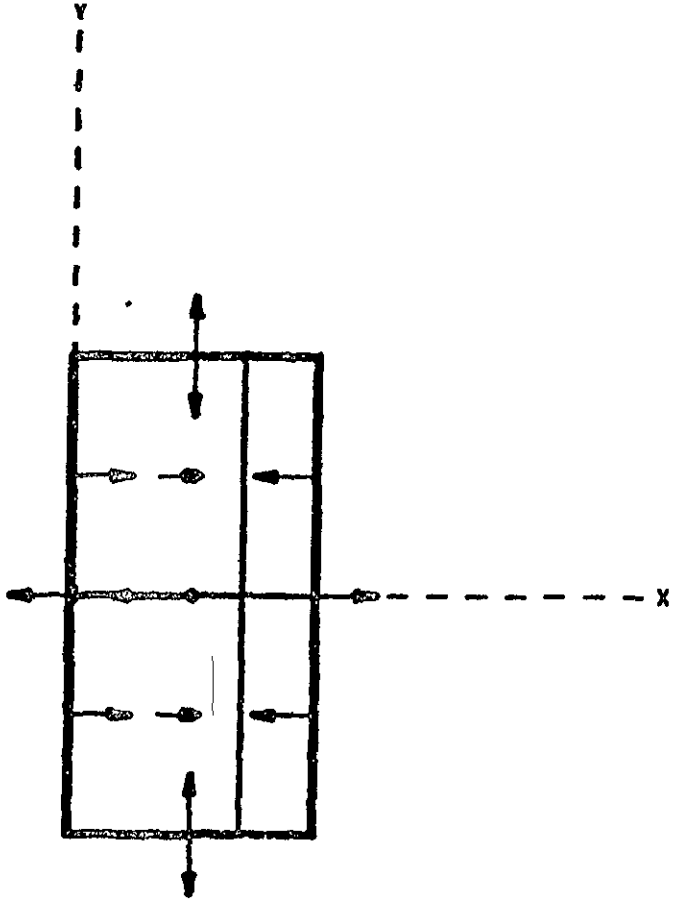
```
IT HAS BEEN A PLEASURE SERVING YOU.  I HOPE YOU ENJOY YOUR  4. FRAMES OF S-C 4060 OUTPUT..
++NOTE++ TRASYS GENERATED    4 PLOT FRAMES
NORMAL TERMINATION BY PROCESSOR


@PHD,PLEB

#BRKPT PRINT$
```

SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN



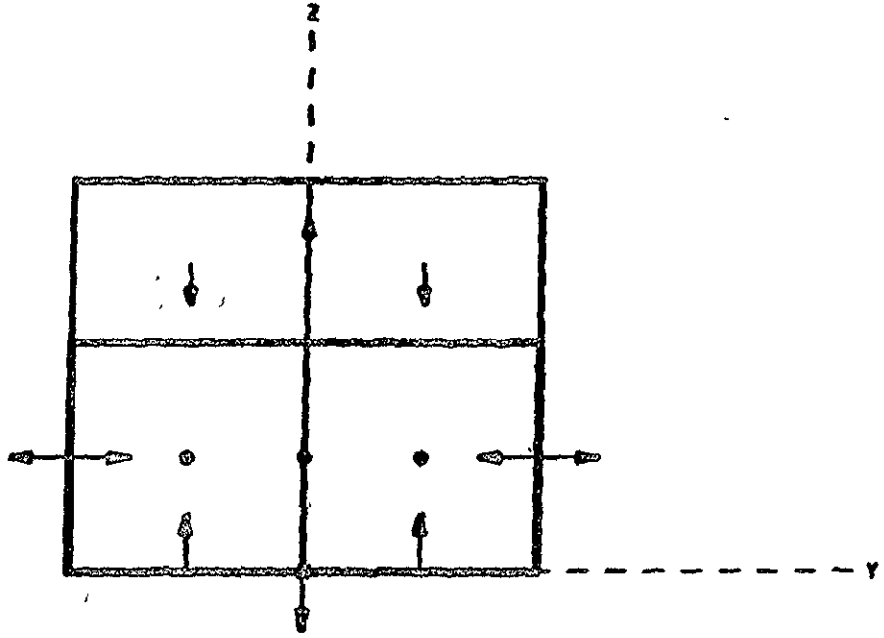
VIEW = 3-D
SCALE = 1.2261
* VIEW NUMBER = 1

SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN



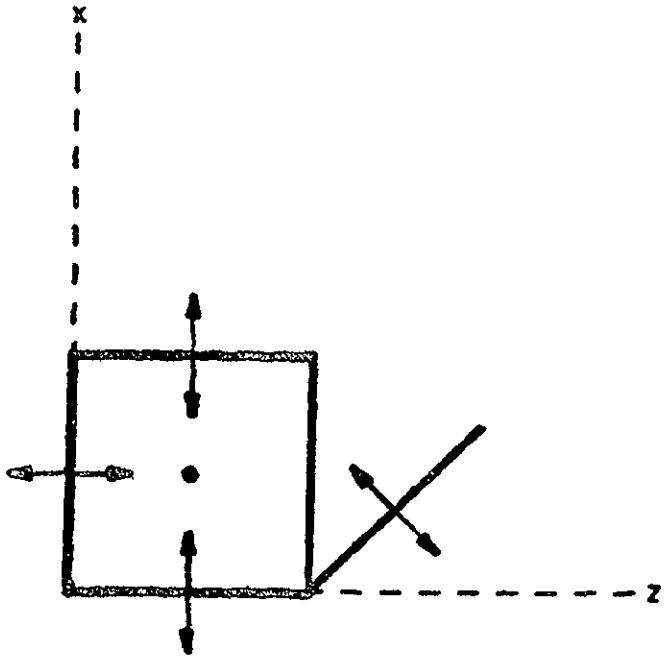
VIEW = Z-AXIS
SCALE = 1.2261
VIEW NUMBER = 1

SAMPLE CASE 1 - EPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN



VIEW = X-AXIS
SCALE = 1.2261
VIEW NUMBER = 1

SAMPLE CASE 1 - NPLOT/SFCAL/FFCAL/GBCAL/RKCAL - ORIGINAL RUN



VIEW = Y-AXIS
SCALE = 1.2261
VIEW NUMBER = 1

SAMPLE CASE 2

SAMPLE CASE 2

```
@ED,R VOGTB.CASE2
FILE IN FIELD 1 DISABLED--ACCEPTED
FILE IN FIELD 1 IN USE BY ANOTHER RUN
READ-ONLY MODE
CASE UPPER ASSUMED
ED 14.02-06/27-00:50-(0,)
EDIT
      1:@RUN,R/R RVMH02,3240-F261-C,ES3-N03711,07,300                NO DECK VOGT
     10:@ASG,T RSI.,8C,X04861
     11:@ADD ES3-TRASYS*TRASYS.STARTM
     12:@SETC 0100
     13:@ADD PREPRO
     14:HEADER OPTIONS DATA
     15:TITLE  SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
     16:C          RESTARTING SFCAL/FFCAL/GBCAL FROM SAMPLE CASE 1
     17:C          COMBINING NODES IN RCCAL
     18:C          CALCULATING DIRECT INCIDENT FLUXES USING SHADOW
     19:C          FACTOR TABLES FROM SAMPLE CASE 1.
     20:C
     21:        MODEL        = SAMPLE
     22:        RSI          = RSTSAM
     23:        RSO          = RSTSAM2
     24:HEADER EDIT DATA
     25:*D,127,171
     26:*D,195
     27:C-----BUILD THE CASE 1 CONFIGURATION FOR SFCAL/FFCAL/GBCAL RESTART
     28:*D,198,203
     29:*D,205
     30:C-----READ AND PRINT THE SHADOW FACTOR TABLES FROM RSI FOR USE IN
     31:*I,207
     32:        SFPRNT=YES
     33:*D,210
     34:C-----READ THE FORM FACTOR MATRIX FROM RSI
     35:*D,214
     36:C-----READ THE GRAY BODY MATRICES FROM RSI
     37:*D,219,221
     38:C-----CALCULATE AND PUNCH RADKS WITH COMBINED NODES
     39:C
     40:        CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,5HCASE2)
     41:*I,222
     42:C
     43:C-----DEFINE ORBIT AND VEHICLE ORIENTATION (CIRCULAR - PLANET ORIENTED)
     44:C
     45:           CALL ORBIT2(EAR,0,60.,0,0,0,100.*6080.,100.*6080.)
     46:           CALL ORIENT(4HPLAN,1,2,3,300.,270.,0.)
     47:C
     48:ORBGEN CIRP,0.,180.,2,AQ
     49:C
     50:C-----THE CONFIGURATION NAME IS REDEFINED SO THE QO'S WILL USE
     51:C-----THE DESIRED(CASE2) CORRESPONDENCE DATA.
     52:C
     53:        MODELN=5HCASE2
     54:        CALL QODATA(5HALL,0,0,0,0,0,0,0)
     55:L      QOCAL
     56:C
     57:C-----MAKE ORBIT PLOTS
     58:C
```

```
      59:           CALL ODATAS(1,0,0,0,0,0,0,0)
      60:           CALL ODATAS(2,0,0,0,0,90.,0,0)
      61:           CALL ODATAS(3,0,0,0,0,180.,0,0)
      62:L          OPLOT
      63:@PMD,BLEP
      64:@ASG,T/S RSO.,8C,RSO,92,RSO APPENDIX H, CASE 2.
      65:@ADD PROCSS
      73:@FIN
NO CORRECTIONS APPLIED.


@ASG,T RSI.,8C,X04861


@FREE TPF$.


@ASG,T TPF$.,F4/0/TRK/400
```

NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
UNIVAC 1110/EXEC 8

PRE-PROCESSOR EXECUTION

VERSION.MODIFICATION ... UC2E3
MODIFICATION DATE 052678

DATE OF RUN 062778
TIME OF RUN 005219
JOB NUMBER AVMH02

MODEL = N/A
OPTION AND TITLE DATA BLOCKS

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT             HEADER OPTIONS DATA
INPUT             TITLE  SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
INPUT             C         RESTARTING SFCAL/FFCAL/GBCAL FROM SAMPLE CASE 1
INPUT             C         COMBINING NODES IN RCCAL
INPUT             C         CALCULATING DIRECT INCIDENT FLUXES USING SHADOW
INPUT             C         FACTOR TABLES FROM SAMPLE CASE 1.
INPUT             C
INPUT                    MODEL       = SAMPLE
INPUT                    RSI         = RSTSAM
INPUT                    RSO         = RSTSAM2
```

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
TRASYS INFORMATION TO USER

```
**********************************************************
*                                                        *
*    A T T E N T I O N   T R A S Y S   U S E R S         *
*                                                        *
**********************************************************
```

THIS SECTION OF THE TRASYS PRINTOUT HAS DEVISED TO INFORM THE TRASYS USERS OF THE STATUS OF THE TRASYS PROGRAM WITHOUT HAVING TO PRINTOUT ALL THE STATUS INFORMATION ON EVERY RUN. TO OBTAIN ADDITIONAL INFORMATION ON HOW TO USE THIS SECTION OF THE TRASYS PRINTOUT. PLACE A (INFO=INFO) IN THE OPTIONS DATA BLOCK.

FOR TRASYS ASSISTANCE AND/OR POSSIBLE TRASYS PROGRAM PROBLEMS, PLEASE CONTACT BOB VOGT AT JSC-2326.

NEWRL 08/29/77 DOCUMENTATION ADDITION

THE TRASYS -N- VERSION HAS BEEN UPDATED TO THE UC2E2 AND UL2E4 LEVEL.
SEE LATEST USERS MANUAL FOR INFORMATION ON USER-CALLED SUBROUTINE ARGUMENT CHANGES AND NEW CAPABILITIES.

END OF TRASYS INFORMATION FILE

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
MODEL HISTORY

MODEL NAME ..... SAMPLE

MODEL TITLE ..... SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT

MOD LABEL	RUN JOB NUMBER	RUN DATA	RUN TIME	RSI TAPE	RSO TAPE	RTI TAPE	RTO TAPE	CMERG TAPE	EMERG TAPE	BCDOU TAPE	TRAJ TAPE	USER1 TAPE	USER2 TAPE
AA	RVMH01	062278	202625		RSTSAM								
AB	RVMH02	062778	005225	RSTSAM	RSTSAM								

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SOURCE DATA EDIT DIRECTIVES

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

                 HEADER EDIT DATA
****             *D,127,171
   D             HEADER FORM FACTOR DATA                                                          OLD-     127   AA
   D             C                                                                                OLD-     128   AA
   D             C-----ENTER KNOWN ZERO FORM FACTORS AND EQUIVALENT FORM FACTORS FOR               OLD-     129   AA
   D             C-----CASE1.                                                                     OLD-     130   AA
   D             C                                                                                OLD-     131   AA
   D             FIG    CASE1                                                                     OLD-     132   AA
   D             NODEA  1,2,3,4,11,12,13,14,5,15,21,22,23,24,25,26,END                           OLD-     133   AA
   D             BOTH   21,ZERO                                                                   OLD-     134   AA
   D                    22,ZERO                                                                   OLD-     135   AA
   D                    23,ZERO                                                                   OLD-     136   AA
   D                    24,ZERO                                                                   OLD-     137   AA
   D                    25,ZERO                                                                   OLD-     138   AA
   D                    26,ZERO                                                                   OLD-     139   AA
   D                    1,1,0.                                                                    OLD-     140   AA
   D                    11,12,1,2                                                                 OLD-     141   AA
   D                    11,13,1,3                                                                 OLD-     142   AA
   D                    11,14,1,4                                                                 OLD-     143   AA
   D                    11,15,1,5                                                                 OLD-     144   AA
   D                    1,11,0.                                                                   OLD-     145   AA
   D                    11,2,1,12                                                                 OLD-     146   AA
   D                    11,3,1,13                                                                 OLD-     147   AA
   D                    11,4,1,14                                                                 OLD-     148   AA
   D                    11,5,1,15                                                                 OLD-     149   AA
   D                    2,2,0.                                                                    OLD-     150   AA
   D                    2,3,1,2                                                                   OLD-     151   AA
   D                    2,4,1,4                                                                   OLD-     152   AA
   D                    12,13,2,3                                                                 OLD-     153   AA
   D                    12,14,2,4                                                                 OLD-     154   AA
   D                    12,15,2,5                                                                 OLD-     155   AA
   D                    12,3,2,13                                                                 OLD-     156   AA
   D                    12,4,2,14                                                                 OLD-     157   AA
   D                    12,5,2,15                                                                 OLD-     158   AA
   D                    3,3,0.                                                                    OLD-     159   AA
   D                    3,4,1,4                                                                   OLD-     160   AA
   D                    13,14,3,4                                                                 OLD-     161   AA
   D                    13,15,3,5                                                                 OLD-     162   AA
   D                    3,13,0.                                                                   OLD-     163   AA
   D                    13,4,3,14                                                                 OLD-     164   AA
   D                    13,5,3,15                                                                 OLD-     165   AA
   D                    4,4,0.                                                                    OLD-     166   AA
   D                    14,15,4,5                                                                 OLD-     167   AA
   D                    4,14,0.                                                                   OLD-     168   AA
   D                    14,5,4,15                                                                 OLD-     169   AA
   D                    5,5,0.                                                                    OLD-     170   AA
   D                    5,15,0.                                                                   OLD-     171   AA
```

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SOURCE DATA EDIT DIRECTIVES

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL
****             *D,195
   D             C-----BUILD THE CASE 1 CONFIGURATION                                              OLD-      195   AA
  I              C-----BUILD THE CASE 1 CONFIGURATION FOR SFCAL/FFCAL/GBCAL RESTART          150                   AB
****             *D,198,203
   D             C                                                                                 OLD-      198   AA
   D             C-----PLOT THE CASE 1 CONFIGURATION INDICATING THE ACTIVE                         OLD-      199   AA
   D             C-----SIDES OF THE NODES.                                                         OLD-      200   AA
   D             C                                                                                 OLD-      201   AA
   D                   CALL NDATAS(0,0,0,YES,0)                                                    OLD-      202   AA
   D             L     NPLOT                                                                       OLD-      203   AA
****             *D,205
   D             C-----CALCULATE SHADOW FACTOR TABLES FOR SUBSEQUENT USE                           OLD-      205   AA
  I              C-----READ AND PRINT THE SHADOW FACTOR TABLES FROM RSI FOR USE IN           154                   AB
****             *I,207
  I                    SFPRNT=YES                                                            157                   AB
****             *D,210
   D             C-----CALCULATE THE FORM FACTOR MATRIX.                                           OLD-      210   AA
  I              C-----READ THE FORM FACTOR MATRIX FROM RSI                                  160                   AB
****             *D,214
   D             C-----CALCULATE THE GRAY BODY MATRIX.                                             OLD-      214   AA
  I              C-----READ THE GRAY BODY MATRICES FROM RSI                                  164                   AB
****             *D,219,221
   D             C-----CALCULATE AND PUNCH RADIATION CONDUCTORS.                                   OLD-      219   AA
   D             C                                                                                 OLD-      220   AA
   D                   CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)                                      OLD-      221   AA
  I              C-----CALCULATE AND PUNCH RADKS WITH COMBINED NODES                         169                   AB
  I              C                                                                           170                   AB
  I                   CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,5HCASE2)                          171                   AB
****             *I,222
  I              C                                                                           173                   AB
  I              C-----DEFINE ORBIT AND VEHICLE ORIENTATION (CIRCULAR - PLANET ORIENTED)     174                   AB
  I              C                                                                           175                   AB
  I                      CALL ORBIT2(EAR,0,60.,0,0,0,100.*6080.,100.*6080.)                  176                   AB
  I                      CALL ORIENT(4HPLAN,1,2,3,300.,270.,0.)                              177                   AB
  I              C                                                                           178                   AB
  I              ORBGEN CIRP,0.,180.,2,AQ                                                    179                   AB
  I              C                                                                           180                   AB
  I              C-----THE CONFIGURATION NAME IS REDEFINDED SO THE QO'S WILL USE              181                   AB
  I              C-----THE DESIRED(CASE2) CORRESPONDENCE DATA.                               182                   AB
  I              C                                                                           183                   AB
  I                    MODELN=5HCASE2                                                        184                   AB
  I                    CALL QODATA(3HALL,0,0,0,0,0,0,0)                                      185                   AB
  I              L     QOCAL                                                                 186                   AB
  I              C                                                                           187                   AB
  I              C-----MAKE ORBIT PLOTS                                                      188                   AB
  I              C                                                                           189                   AB
  I                      CALL ODATAS(1,0,0,0,0,0,0,0)                                        190                   AB
```

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SOURCE DATA EDIT DIRECTIVES

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
  I                        CALL ODATAS(2,0,0,0,0,90.,0,0)                                          191                  AB
  I                        CALL ODATAS(3,0,0,0,0,180.,0,0)                                         192                  AB
  I              L         OPLOT                                                                   193                  AB
```

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SURFACE DATA INPUT BLOCK

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
RSI               HEADER SURFACE DATA                                                                    1  OLD-       1   AA
RSI               C                                                                                      2  OLD-       2   AA
RSI               C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5                       3  OLD-       3   AA
RSI               C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT                     4  OLD-       4   AA
RSI               C-----CASES.                                                                           5  OLD-       5   AA
RSI               C                                                                                      6  OLD-       6   AA
RSI               BCS     BOXINR                                                                         7  OLD-       7   AA
RSI               S       SURFN       = 1                                                                8  OLD-       8   AA
RSI                       TYPE        = RECT                                                             9  OLD-       9   AA
RSI                       ACTIVE      = BOTTOM                                                          10  OLD-      10   AA
RSI                       PROP        = 0.9,0.9                                                         11  OLD-      11   AA
RSI                       P1          = 1.0, 0.0, 1.0                                                   12  OLD-      12   AA
RSI                       P2          = 1.0, 0.0, 0.0                                                   13  OLD-      13   AA
RSI                       P3          = 1.0, 1.0, 0.0                                                   14  OLD-      14   AA
RSI                       COM         = * INNER RIGHT FRONT *                                           15  OLD-      15   AA
RSI               S       SURFN       = 2                                                               16  OLD-      16   AA
RSI                       TYPE        = RECT                                                            17  OLD-      17   AA
RSI                       ACTIVE      = BOTTOM                                                          18  OLD-      18   AA
RSI                       PROP        = 0.9,0.9                                                         19  OLD-      19   AA
RSI                       P1          = 1.0, 1.0, 1.0                                                   20  OLD-      20   AA
RSI                       P2          = 1.0, 1.0, 0.0                                                   21  OLD-      21   AA
RSI                       P3          = 0.0, 1.0, 0.0                                                   22  OLD-      22   AA
RSI                       COM         = * INNER RIGHT SIDE *                                            23  OLD-      23   AA
RSI               S       SURFN       = 3                                                               24  OLD-      24   AA
RSI                       TYPE        = RECT                                                            25  OLD-      25   AA
RSI                       ACTIVE      = TOP                                                             26  OLD-      26   AA
RSI                       PROP        = 0.9,0.9                                                         27  OLD-      27   AA
RSI                       P1          = 0.0, 0.0, 1.0                                                   28  OLD-      28   AA
RSI                       P2          = 0.0, 0.0, 0.0                                                   29  OLD-      29   AA
RSI                       P3          = 0.0, 1.0, 0.0                                                   30  OLD-      30   AA
RSI                       COM         = * INNER RIGHT BACK *                                            31  OLD-      31   AA
RSI               S       SURFN       = 4                                                               32  OLD-      32   AA
RSI                       TYPE        = RECT                                                            33  OLD-      33   AA
RSI                       ACTIVE      = TOP                                                             34  OLD-      34   AA
RSI                       PROP        = 0.9,0.9                                                         35  OLD-      35   AA
RSI                       P1          = 1.0, 1.0, 0.0                                                   36  OLD-      36   AA
RSI                       COM         = * INNER RIGHT BOTTOM *                                          37  OLD-      37   AA
RSI               BCS     BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000                                      38  OLD-      38   AA
RSI               C                                                                                     39  OLD-      39   AA
RSI               C-----THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000                     40  OLD-      40   AA
RSI               C-----TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX HAS INPUT IN                      41  OLD-      41   AA
RSI               C-----THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW                     42  OLD-      42   AA
RSI               C-----THE USE OF 'MESS' AND 'ERN' NODES.                                               43  OLD-      43   AA
RSI               C                                                                                     44  OLD-      44   AA
```

IMAGING SURFACE (1) BCS (BOXINR), GENERATING SURFACE (11) BCS (BOXINL)
IMAGING SURFACE (2) BCS (BOXINR), GENERATING SURFACE (12) BCS (BOXINL)
IMAGING SURFACE (3) BCS (BOXINR), GENERATING SURFACE (13) BCS (BOXINL)

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SURFACE DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

                IMAGING SURFACE (    4) BCS (BOXINR), GENERATING SURFACE (   14) BCS (BOXINL)
RSI             R     REFNO      = 1000                                                          45  OLD-     45   AA
RSI                   P1         = 1.0, 0.0, 1.0                                                 46  OLD-     46   AA
RSI                   P2         = 1.0, 0.0, 0.0                                                 47  OLD-     47   AA
RSI                   P3         = 0.0, 0.0, 0.0                                                 48  OLD-     48   AA
RSI                   COM        = * IMAGING PLANE *                                             49  OLD-     49   AA
RSI             BCS   LIDINR                                                                     50  OLD-     50   AA
RSI             S     SURFN      = 5                                                             51  OLD-     51   AA
RSI                   TYPE       = RECT                                                          52  OLD-     52   AA
RSI                   ACTIVE     = BOTTOM                                                        53  OLD-     53   AA
RSI                   PROP       = 0.9,0.9                                                       54  OLD-     54   AA
RSI                   P1         = 1.0, 1.0, 0.0                                                 55  OLD-     55   AA
RSI                   COM        = * INNER RIGHT LID *                                           56  OLD-     56   AA
RSI             S     SURFN      = 15                                                            57  OLD-     57   AA
RSI                   IMAGSF     = 5                                                             58  OLD-     58   AA
RSI                   IREFSF     = 1000                                                          59  OLD-     59   AA
RSI                   COM        = * INNER LEFT LID *                                            60  OLD-     60   AA
RSI             BCS   BOXOUT                                                                     61  OLD-     61   AA
RSI             S     SURFN      = 21                                                            62  OLD-     62   AA
RSI                   TYPE       = BOX5                                                          63  OLD-     63   AA
RSI                   ACTIVE     = OUT                                                           64  OLD-     64   AA
RSI                   SHADE      = NO                                                            65  OLD-     65   AA
RSI                   PROP       = 0.2,0.9                                                       66  OLD-     66   AA
RSI                   P1         = 1.01,-1.01, 1.01                                              67  OLD-     67   AA
RSI                   P2         = 1.01, 1.01, 1.01                                              68  OLD-     68   AA
RSI                   P3         =-0.01, 1.01, 1.01                                              69  OLD-     69   AA
RSI                   P4         =-0.01, 1.01,-0.01                                              70  OLD-     70   AA
RSI                   COM        = * OUTER SURFACES *                                            71  OLD-     71   AA
RSI             BCS   LIDOUT                                                                     72  OLD-     72   AA
RSI             S     SURFN      = 26                                                            73  OLD-     73   AA
RSI                   TYPE       = RECT                                                          74  OLD-     74   AA
RSI                   ACTIVE     = TOP                                                           75  OLD-     75   AA
RSI                   SHADE      = NO                                                            76  OLD-     76   AA
RSI                   PROP       = 0.2,0.9                                                       77  OLD-     77   AA
RSI                   P1         = 1.01,-1.01, 0.01                                              78  OLD-     78   AA
RSI                   P2         = 1.01, 1.01, 0.01                                              79  OLD-     79   AA
RSI                   P3         =-0.01, 1.01, 0.01                                              80  OLD-     80   AA
RSI                   COM        = * OUTER SURFACE OF LID *                                      81  OLD-     81   AA
RSI             C                                                                                82  OLD-     82   AA
RSI             C-----THE NEXT TWO BCS'S (HESSR AND HESSL) ARE ACTIVATED IN SAMPLE               83  OLD-     83   AA
RSI             C-----CASE 4 ONLY.                                                               84  OLD-     84   AA
RSI             C                                                                                85  OLD-     85   AA
RSI             BCS   HESSR                                                                      86  OLD-     86   AA
RSI             S     SURFN      = 101                                                           87  OLD-     87   AA
RSI                   TYPE       = RECT                                                          88  OLD-     88   AA
RSI                   ACTIVE     = TOP                                                           89  OLD-     89   AA
RSI                   PROP       = 1.0,1.0                                                       90  OLD-     90   AA
```

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SURFACE DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
RSI                      P1          = 1.0, 0.0, 1.0                                                  91  OLD-      91    AA
RSI                      P2          = 1.0, 0.0, 0.0                                                  92  OLD-      92    AA
RSI                      P3          = 0.0, 0.0, 0.0                                                  93  OLD-      93    AA
RSI                      COM         = * PRIMARY MESS NODE, RIGHT SIDE *                              94  OLD-      94    AA
RSI              BCS     MESSL                                                                        95  OLD-      95    AA
RSI              S       SURFN       = 111                                                            96  OLD-      96    AA
RSI                      TYPE        = RECT                                                           97  OLD-      97    AA
RSI                      ACTIVE      = BOTTOM                                                         98  OLD-      98    AA
RSI                      PROP        = 1.0,1.0                                                        99  OLD-      99    AA
RSI                      P1          = 1.0, 0.0, 1.0                                                 100  OLD-     100    AA
RSI                      P2          = 1.0, 0.0, 0.0                                                 101  OLD-     101    AA
RSI                      P3          = 0.0, 0.0, 0.0                                                 102  OLD-     102    AA
RSI                      COM         = * PRIMARY MESS NODE, LEFT SIDE *                              103  OLD-     103    AA
RSI              C                                                                                    104  OLD-     104    AA
RSI              C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.                  105  OLD-     105    AA
RSI              C                                                                                    106  OLD-     106    AA
RSI              BCS     LIDSP                                                                        107  OLD-     107    AA
RSI              S       SURFN       = 200                                                            108  OLD-     108    AA
RSI                      TYPE        = RECT                                                           109  OLD-     109    AA
RSI                      ACTIVE      = BOTTOM                                                         110  OLD-     110    AA
RSI                      PROP        = 0.1,0.1                                                        111  OLD-     111    AA
RSI                      SPRI        = 0.8                                                            112  OLD-     112    AA
RSI                      SPRS        = 0.8                                                            113  OLD-     113    AA
RSI                      P1          = 1.0,-1.0, 0.0                                                  114  OLD-     114    AA
RSI                      P2          = 1.0, 1.0, 0.0                                                  115  OLD-     115    AA
RSI                      P3          = 0.0, 1.0, 0.0                                                  116  OLD-     116    AA
RSI                      COM         = * SPECULAR LID *                                               117  OLD-     117    AA
```

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
BCS DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL
RSI             HEADER BCS DATA                                                                  118  OLD-     118   AA
RSI             BCS    BOXINR                                                                    119  OLD-     119   AA
RSI             BCS    BOXINL                                                                    120  OLD-     120   AA
RSI             BCS    LIDINR ,0.,0.,1.,0.,-45.,0.                                               121  OLD-     121   AA
RSI             BCS    BOXOUT                                                                    122  OLD-     122   AA
RSI             BCS    LIDOUT ,0.,0.,1.,0.,-45.,0.                                               123  OLD-     123   AA
RSI             BCS    MESSR                                                                     124  OLD-     124   AA
RSI             BCS    MESSL                                                                     125  OLD-     125   AA
RSI             BCS    LIDSP  ,0.,0.,1.,0.,-45.,0.                                               126  OLD-     126   AA
```

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
CORRESPONDENCE DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI             HEADER CORRESPONDENCE DATA                                                        127  OLD-     172   AA
RSI             C                                                                                 128  OLD-     173   AA
RSI             C-----ENTER CORRESPONDENCE DATA FOR CASE 2                                        129  OLD-     174   AA
RSI             C                                                                                 130  OLD-     175   AA
RSI             FIG    CASE2                                                                      131  OLD-     176   AA
RSI                    1          = 1,11,22                                                      132  OLD-     177   AA
RSI                    2          = 2,25                                                         133  OLD-     178   AA
RSI                    3          = 3,13,24                                                      134  OLD-     179   AA
RSI                    4          = 4,14,21                                                      135  OLD-     180   AA
RSI                    5          = 5,15,26                                                      136  OLD-     181   AA
RSI                    12         = 12,23                                                        137  OLD-     182   AA
RSI             C                                                                                 138  OLD-     183   AA
RSI             C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS                139  OLD-     184   AA
RSI             C                                                                                 140  OLD-     185   AA
RSI             FIG    CASE3.FF                                                                   141  OLD-     186   AA
RSI                    1          = 1,11,22                                                      142  OLD-     187   AA
RSI                    2          = 2,25                                                         143  OLD-     188   AA
RSI                    3          = 3,13,24                                                      144  OLD-     189   AA
RSI                    4          = 4,14,21                                                      145  OLD-     190   AA
RSI                    5          = 5,15,26                                                      146  OLD-     191   AA
RSI                    12         = 12,23                                                        147  OLD-     192   AA
```

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
OPERATION DATA INPUT BLOCK (PASS 1)

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
RSI               HEADER OPERATIONS DATA                                                          148  OLD-     193    AA
```

+++++ OPERATIONS DATA BLOCK (PASS 1) COMPLETE +++++

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
OPERATION DATA INPUT BLOCK (PASS 2)

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL
RSI             C                                                                                    149  OLD-     194   AA
INPUT           C-----BUILD THE CASE 1 CONFIGURATION FOR SFCAL/FFCAL/GBCAL RESTART                   150                 AB
RSI             C                                                                                    151  OLD-     196   AA
PROG            STEP      -1                                                                           0
RSI             BUILD  CASE1,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT                                      152  OLD-     197   AA
PROG                   CALL BUILDC (BOXINR,6HCASE1 )                                                  0
PROG                   CALL ADD (BOXINL)                                                              0
PROG                   CALL ADD (LIDINR)                                                              0
PROG                   CALL ADD (BOXOUT)                                                              0
PROG                   CALL ADD (LIDOUT)                                                              0
RSI             C                                                                                    153  OLD-     204   AA
INPUT           C-----READ AND PRINT THE SHADOW FACTOR TABLES FROM RSI FOR USE IN                     154                 AB
RSI             C-----SAMPLE CASE 2 IN THE CALCULATION OF DIRECT FLUXES.                             155  OLD-     206   AA
RSI             C                                                                                    156  OLD-     207   AA
INPUT                  SFPRNT=YES                                                                     157                 AB
RSI             L      SFCAL                                                                         158  OLD-     208   AA
RSI             C                                                                                    159  OLD-     209   AA
INPUT           C-----READ THE FORM FACTOR MATRIX FROM RSI                                           160                 AB
RSI             C                                                                                    161  OLD-     211   AA
RSI             L      FFCAL                                                                         162  OLD-     212   AA
RSI             C                                                                                    163  OLD-     213   AA
INPUT           C-----READ THE GRAY BODY MATRICES FROM RSI                                           164                 AB
RSI             C                                                                                    165  OLD-     215   AA
RSI                    CALL GBDATA(BOTH,0,FF)                                                        166  OLD-     216   AA
RSI             L      GBCAL                                                                         167  OLD-     217   AA
RSI             C                                                                                    168  OLD-     218   AA
INPUT           C-----CALCULATE AND PUNCH RADKS WITH COMBINED NODES                                   169                 AB
INPUT           C                                                                                    170                 AB
INPUT                  CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,5HCASE2)                                  171                 AB
RSI             L      RKCAL                                                                         172  OLD-     222   AA
INPUT           C                                                                                    173                 AB
INPUT           C-----DEFINE ORBIT AND VEHICLE ORIENTATION (CIRCULAR - PLANET ORIENTED)              174                 AB
INPUT           C                                                                                    175                 AB
INPUT                CALL ORBIT2(EAR,0,60.,0,0,0,100.*6080.,100.*6080.)                             176                 AB
INPUT                CALL ORIENT(4HPLAN,1,2,3,300.,270.,0.)                                         177                 AB
INPUT           C                                                                                    178                 AB
PROG            C                                                                                    0
PROG            C********************  ORBIT GENERATION STARTS HERE  ********************           0
INPUT           CORBGEN CIRP,0.,180.,2,AQ                                                            179                 AB
PROG            C                                                                                    0
PROG            STEP  10000                                                                          0
PROG                  TRUEAN       =       .000                                                      0
PROG                  TRUANF       =    180.000                                                      0
PROG                  TRUANI       =       .000                                                      0
PROG                  IAI          = 0                                                               0
PROG                  IAS          = 0                                                               0
PROG                  PLTYPE       = 6HPLSAVE                                                        0
PROG                  CALL DICOMP(0,0,0)                                                             0
PROG            L      DICAL                                                                         0
```

```
PROG            NSPFF       = 10000,                                    *       0
PROG            PLTYPE      = 6HPLREAD                                  *       0
PROG            CALL AQDATA(IAI,IAS,0,0,0)                              *       0
PROG      L     AQCAL                                                   *       0
PROG      STEP  10001                                                   *       0
PROG            TRUEAN      =       90.000                              *       0
PROG            CALL DICOMP(0,0,10000)                                  *       0
PROG      L      DICAL                                                  *       0
PROG            CALL AQDATA(IAI,IAS,0,0,0)                              *       0
PROG      L     AQCAL                                                   *       0
PROG      STEP  10002                                                   *       0
PROG            TRUEAN      =      180.000                              *       0
PROG            CALL DICOMP(0,0,10000)                                  *       0
PROG      L      DICAL                                                  *       0
PROG            CALL AQDATA(IAI,IAS,0,0,0)                              *       0
PROG      L     AQCAL                                                   *       0
PROG      STEP  10003                                                   *       0
PROG            IF(SHADIN.LT.0.)                  GO TO 90400           *       0
PROG            TRUEAN      = SHADIN-0.1                                *       0
PROG            IF(TRUEAN.LT.TRUANI.OR.                                 *       0
PROG           1    TRUEAN.GT.TRUANF)             GO TO  90000          *       0
PROG            CALL DICOMP(0,4HZERO,10000)                             *       0
PROG      L      DICAL                                                  *       0
PROG            CALL AQDATA(IAI,IAS,0,0,0)                              *       0
PROG      L     AQCAL                                                   *       0
PROG      90000 CONTINUE                                                *       0
PROG      STEP  10004                                                   *       0
PROG            TRUEAN      = SHADIN+0.1                                *       0
PROG            IF(TRUEAN.LT.TRUANI.OR.                                 *       0
PROG           1    TRUEAN.GT.TRUANF)             GO TO  90100          *       0
PROG            CALL DICOMP(0,0,10000)                                  *       0
PROG      L      DICAL                                                  *       0
PROG            CALL AQDATA(IAI,IAS,0,0,0)                              *       0
PROG      L     AQCAL                                                   *       0
PROG      90100 CONTINUE                                                *       0
PROG      STEP  10005                                                   *       0
PROG            TRUEAN      = SHAOUT+0.1                                *       0
PROG            IF(TRUEAN.LT.TRUANI.OR.                                 *       0
PROG           1    TRUEAN.GT.TRUANF)             GO TO  90200          *       0
PROG            CALL DICOMP(0,4HZERO,10000)                             *       0
PROG      L      DICAL                                                  *       0
PROG            CALL AQDATA(IAI,IAS,0,0,0)                              *       0
PROG      L     AQCAL                                                   *       0
PROG      90200 CONTINUE                                                *       0
PROG      STEP  10006                                                   *       0
PROG            TRUEAN      = SHAOUT-0.1                                *       0
PROG            IF(TRUEAN.LT.TRUANI.OR.                                 *       0
PROG           1    TRUEAN.GT.TRUANF)             GO TO  90300          *       0
PROG            CALL DICOMP(0,0,10000)                                  *       0
PROG      L      DICAL                                                  *       0
PROG            CALL AQDATA(IAI,IAS,0,0,0)                              *       0
PROG      L     AQCAL                                                   *       0
PROG      90300 CONTINUE                                                *       0
PROG      90400 CONTINUE                                                *       0
PROG            CALL QQDATA(3HALL,0,0,0,0,0,0,0 )                       *       0
PROG      L     QQCAL                                                   *       0
PROG      C                                                             *       0
```

```
PROG    C**********************  ORBIT GENERATION ENDS HERE  **********************          0
PROG    C                                                                                   0
INPUT   C                                                                                 180    AB
INPUT   C-----THE CONFIGURATION NAME IS REDEFINDED SO THE QO'S WILL USE                   181    AB
INPUT   C-----THE DESIRED(CASE2) CORRESPONDENCE DATA.                                     182    AB
INPUT   C                                                                                 183    AB
INPUT           MODELN=5HCASE2                                                            184    AB
INPUT           CALL QODATA(3HALL,0.,0.,0.,0.,0.,0.)                                      185    AB
INPUT   L       QOCAL                                                                     186    AB
INPUT   C                                                                                 187    AB
INPUT   C-----MAKE ORBIT PLOTS                                                            188    AB
INPUT   C                                                                                 189    AB
INPUT               CALL ODATAS(1,0.,0.,0.,0.,0.,0.)                                      190    AB
INPUT               CALL ODATAS(2,0.,0.,0.,0.,90.,0.)                                     191    AB
INPUT               CALL ODATAS(3,0.,0.,0.,0.,180.,0.)                                    192    AB
INPUT   L           OPLOT                                                                 193    AB
RSI     END OF DATA                                                                       194    AA
```

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
PROCESSOR CORE ALLOCATION

THE FOLLOWING IS THE PROCESSOR CORE ALLOCATION FOR THOSE SEGMENTS WHICH WILL BE LOADED IN THIS EXECUTION (APPROX.) ...

	OCTAL/DECIMAL
TRASYS (0) SEGMENT	121213/ 41611
OPERATIONS DATA (NOT KNOWN AT THIS TIME)	175000/ 64000
INITALIZATION SEGMENT	122300/ 42176
FORM FACTOR SEGMENT	136100/ 48192
SHADOW FACTOR SEGMENT	136000/ 48128
ORBITAL PLOTTER SEGMENT	125700/ 43968
DIRECT FLUX SEGMENT	150500/ 53568
GRAY BODY SEGMENT	124000/ 43008
ABSORBED Q-S SEGMENT	122500/ 42304
-QO- SEGMENT	130600/ 45440
RADATION CONDUCTOR SEGMENT	125500/ 43840
GRAY BODY DYNAMIC COMMON	000276/ 190
-QO- DYNAMIC COMMON	003554/ 1900
RADIATION CONDUCTOR DYNAMIC COMMON	000574/ 380
GRAY BODY MINIMUM - MAXIMUM CORE	123566/ 42870 - 123716/ 42950
-QO- MINIMUM - MAXIMUM CORE	125142/ 43618 - 130552/ 45418
RADIATION CONDUCTOR MINIMUM - MAXIMUM CORE	125221/ 43665 - 125465/ 43829
MINIMUM CORE NEEDED FOR PROCESSOR EXECUTION	150500/ 53568
MAXIMUM CORE NEEDED FOR PROCESSOR EXECUTION	150500/ 53568
AMOUNT OF CORE THAT WILL BE USED BY PROCESSSOR	150500/ 53568

MODEL = SAMPLE SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
WRAP UP OF THE PRE-PROCESSOR

PRE-PROCESSOR ACCOUNTING INFORMATION	CP-SEC	DYM-STORAGE
SOURCE EDITING	2.251	676
DOCUMENTATION DATA PRE-PROCESSING	.000	0
QUANTITIES DATA PRE-PROCESSING	.039	266
ARRAY DATA PRE-PROCESSING	.000	0
SURFACE DATA PRE-PROCESSING (PASS 1)	2.009	64
SURFACE DATA PRE-PROCESSING (PASS 2)	.743	1141
BCS DATA PRE-PROCESSING	.268	186
FORM FACTOR DATA PRE-PROCESSING	.000	0
SHADOW DATA PRE-PROCESSING	.000	0
FLUX DATA PRE-PROCESSING	.000	0
CORRESPONDENCE DATA PRE-PROCESSING	.243	101
OPERATIONS DATA PRE-PROCESSING	4.114	879
SUBROUTINE DATA PRE-PROCESSING	.312	0
SEQENTIAL TAPE INITIALIZATION	.027	0

TOTAL CP TIME FOR PRE-PROCESSOR ..... 10.739 DECIMAL SECONDS OR 000013 OCTAL SECONDS

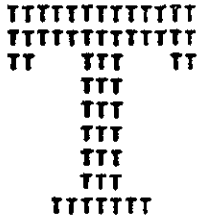
MINIMUM DYNAMIC STORAGE NEEDED BY PRE-PROCESSOR .. 1141 DECIMAL WORDS

DYNAMIC STORAGE AVAILABLE TO PRE-PROCESSOR ..... 10000 DECIMAL WORDS

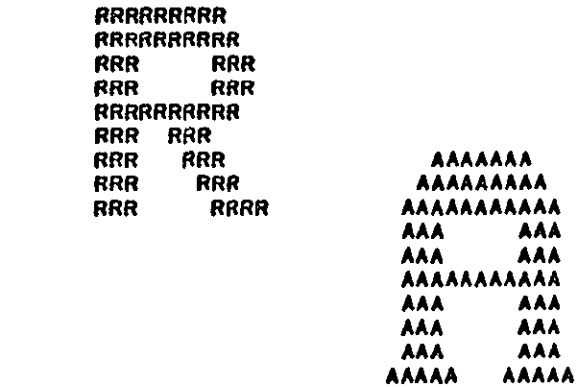
NORMAL TERMINATION BY PRE-PROCESSOR

```
@PMD,8LEP

@ASG,T/S RSO.,8C,RSO,92,RSO APPENDIX H, CASE 2.

@TEST TNE/1/S3

@JUMP L3
INTERVENING STATEMENTS SKIPPED

@L3:FREE DATA1.

@FREE 14
```

NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
UNIVAC 1110/EXEC 8



TRASYS II



PROCESSOR EXECUTION

VERSION.MODIFICATION ... UL2E6
MODIFICATION DATE 061978

DATE OF RUN 062778
TIME OF RUN 010030
JOB NUMBER RVMH02

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
PROCESSING OPERATIONS DATA

SEQUENCE	NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS----------
1	1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
6	12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
7	13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
8	14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
9	5	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT LID
10	15	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER LEFT LID
11	21	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
12	22	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
13	23	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
14	24	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
15	25	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
16	26	LIDOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACE OF LID

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER = 1)

MODEL=SAMPLE CONFIG=CASE1 ' STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

++

RESTARTING - SFCAL - DATA FOR CONFIGURATION- CASE1 -FROM UNIT - 14

++

CLOCK ANGLE

NODE 1	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		.0
	.00	.00	.00	.00	.00	.81	.64	.33	.11	.00	.00	.17	.67	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	.58	.42	.19	.06	.00	.00	.00	.03	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.19	.25	.17	.08	.00	.00	.00	.17	.61	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 1	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		.0
	.00	.00	.00	.00	.00	.81	.64	.33	.11	.00	.00	.17	.67	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	.58	.42	.19	.06	.00	.00	.00	.03	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.19	.25	.17	.08	.00	.00	.00	.17	.61	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 2	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.17	.33	.44	.56	.58	.61	22.5
	.42	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.42	.64	.61	.58	.42	45.0
	.19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.61	.42	.25	.22	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 2	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.17	.33	.44	.56	.58	.61	22.5
	.42	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.42	.64	.61	.58	.42	45.0
	.19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.61	.42	.25	.22	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 3	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.06	.08	.03	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.81	.53	.31	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.33	.83	1.00	1.00	45.0
	.33	.42	.31	.25	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.25	.72	.50	.50	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 3	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.06	.08	.03	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.81	.53	.31	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.33	.83	1.00	1.00	45.0
	.33	.42	.31	.25	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.25	.72	.50	.50	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

NODE 4	CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.
SOLAR SHADOW TABLE																			CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.67	.56	.36	.39	.39	.28	.11	.00	.00	.00	.00	.00	.00	.17	.33	.50	.50	.67	.67	22.5
	.00	.00	.06	.08	.00	.00	.06	.00	.00	.00	.00	.00	.03	.28	.64	.50	.17	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

NODE 4	CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.
INFRA RED SHADOW TABLE																			CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.67	.56	.36	.39	.39	.28	.11	.00	.00	.00	.00	.00	.00	.17	.33	.50	.50	.67	.67	22.5
	.00	.00	.06	.08	.00	.00	.06	.00	.00	.00	.00	.00	.03	.28	.64	.50	.17	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 11	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	1.00	.67	.17	.00	.00	.11	.33	.64	.81	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	1.00	.03	.00	.00	.00	.06	.19	.42	.58	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.61	.17	.00	.00	.00	.08	.17	.25	.19	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 11	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	1.00	.67	.17	.00	.00	.11	.33	.64	.81	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	1.00	.03	.00	.00	.00	.06	.19	.42	.58	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.61	.17	.00	.00	.00	.08	.17	.25	.19	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 12	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.58	.56	.44	.33	.17	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.61	22.5
	.42	.58	.61	.64	.42	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42	45.0
	.19	.22	.25	.42	.61	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 12	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.58	.56	.44	.33	.17	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.61	22.5
	.42	.58	.61	.64	.42	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42	45.0
	.19	.22	.25	.42	.61	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 13	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.03	.08	.06	.00	22.5
	1.00	1.00	.83	.33	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.31	.53	.81	1.00	45.0
	.33	.50	.50	.72	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.25	.31	.42	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 13	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.03	.08	.06	.00	22.5
	1.00	1.00	.83	.33	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.31	.53	.81	1.00	45.0
	.33	.50	.50	.72	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.25	.31	.42	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 14	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.67	.67	.50	.50	.33	.17	.00	.00	.00	.00	.00	.00	.11	.28	.39	.39	.36	.56	.67	22.5
	.00	.00	.17	.50	.64	.28	.03	.00	.00	.00	.00	.00	.06	.00	.00	.08	.06	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 14	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.67	.67	.50	.50	.33	.17	.00	.00	.00	.00	.00	.00	.11	.28	.39	.39	.36	.56	.67	22.5
	.00	.00	.17	.50	.64	.28	.03	.00	.00	.00	.00	.00	.06	.00	.00	.08	.06	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 5	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	CONE ANGLE
SOLAR SHADOW TABLE																				
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.56	.67	.67	.72	.72	.00	.00	.00	.00	.00	.00	.00	.14	.14	.33	.50	.50	.67	112.5
	.33	.39	.33	.31	.33	.33	.31	.22	.11	.00	.00	.00	.00	.00	.00	.00	.17	.33	.33	135.0
	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 5	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	CONE ANGLE
INFRA RED SHADOW TABLE																				
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.56	.67	.67	.72	.72	.00	.00	.00	.00	.00	.00	.00	.14	.14	.33	.50	.50	.67	112.5
	.33	.39	.33	.31	.33	.33	.31	.22	.11	.00	.00	.00	.00	.00	.00	.00	.17	.33	.33	135.0
	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 15	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.50	.50	.33	.14	.14	.00	.00	.00	.00	.00	.00	.00	.72	.72	.67	.67	.56	.67	112.5
	.33	.33	.17	.00	.00	.00	.00	.00	.00	.00	.11	.22	.31	.33	.33	.31	.33	.39	.33	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 15	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.50	.50	.33	.14	.14	.00	.00	.00	.00	.00	.00	.00	.72	.72	.67	.67	.56	.67	112.5
	.33	.33	.17	.00	.00	.00	.00	.00	.00	.00	.11	.22	.31	.33	.33	.31	.33	.39	.33	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 21	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 21	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 22	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 22	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 23	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 23	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 24	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 24	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 25	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 25	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 26	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 26	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

SHADOW FACTORS FOR CONFIGURATION CASE1 HAVE BEEN STORED ON RSO.
LAST RECORD WRITTEN = 52

TOTAL TIME FOR SHADOW FACTOR TABLES 9.6

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	.1-05	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
*FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	NO	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

* -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

++

RESTARTING - FFCAL - DATA FOR CONFIGURATION- CASE1 -FROM UNIT - 14

++

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

SEQUENCE	NODE	AREA	ALPH	EMISS
1	1	1.00000	.900	.900
2	2	1.00000	.900	.900
3	3	1.00000	.900	.900
4	4	1.00000	.900	.900
5	11	1.00000	.900	.900
6	12	1.00000	.900	.900
7	13	1.00000	.900	.900
8	14	1.00000	.900	.900
9	5	1.00000	.900	.900
10	15	1.00000	.900	.900
11	21	2.06040	.200	.900
12	22	2.06040	.200	.900
13	23	1.04040	.200	.900
14	24	2.06040	.200	.900
15	25	1.04040	.200	.900
16	26	2.06040	.200	.900

NUMBER OF NODES = 16 NUMBER OF SURFACES = 16
(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
1	2	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
1	3	RSI	.201522	.201522	.201522	.201522	.201522	1.000000	1.000000	.000	0	0	UN
1	4	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
1	12	RSI	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.000	0	0	UN
1	13	RSI	.086058	.086058	.086058	.086058	.086058	1.000000	1.000000	.000	0	0	UN
1	14	RSI	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	.000	0	0	UN
1	5	RSI	.137203	.137203	.137203	.137203	.137203	1.000000	1.000000	.000	0	0	UN
1	15	RSI	.056006	.056006	.056006	.056006	.056006	1.000000	1.000000	.000	0	0	UN
1	FFSUM = .9690		ROW CP TIME = .143										
	FORM FACTOR RESTART (RSO) RECORD = 56												
2	3	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
2	4	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
2	11	RSI	.032922	.032922	.032922	.032922	.032922	.000000	.000000	.000	0	0	UN
2	12	RSI	.068832	.068832	.068832	.068832	.068832	1.000000	1.000000	.000	0	0	UN
2	13	RSI	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.000	0	0	UN
2	14	RSI	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.000	0	0	UN
2	5	RSI	.096343	.096343	.096343	.096343	.096343	1.000000	1.000000	.000	0	0	UN
2	15	RSI	.034262	.034262	.034262	.034262	.034262	1.000000	1.000000	.000	0	0	UN
2	FFSUM = .9203	ROW CP TIME = .153											
	FORM FACTOR RESTART (RSO) RECORD = 57												
3	4	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
3	11	RSI	.086058	.086058	.086058	.086058	.086058	.000000	.000000	.000	0	0	UN
3	12	RSI	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.000	0	0	UN
3	14	RSI	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	.000	0	0	UN
3	5	RSI	.050426	.050426	.050426	.050426	.050426	1.000000	1.000000	.000	0	0	UN
3	15	RSI	.011660	.011660	.011660	.011660	.011660	1.000000	1.000000	.000	0	0	UN
3	FFSUM = .8378	ROW CP TIME = .081											
	FORM FACTOR RESTART (RSO) RECORD = 58												
4	11	RSI	.040501	.040501	.040501	.040501	.040501	.000000	.000000	.000	0	0	UN
4	12	RSI	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.000	0	0	UN
4	13	RSI	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	.000	0	0	UN
4	5	RSI	.107798	.107798	.107798	.107798	.107798	1.000000	1.000000	.000	0	0	UN
4	15	RSI	.056851	.056851	.056851	.056851	.056851	1.000000	1.000000	.000	0	0	UN
4	FFSUM = .9007	ROW CP TIME = .069											
	FORM FACTOR RESTART (RSO) RECORD = 59												
11	12	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
11	13	RSI	.201522	.201522	.201522	.201522	.201522	1.000000	1.000000	.000	0	0	UN

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

(° -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
11	14	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
11	5	RSI	.056006	.056006	.056006	.056006	.056006	1.000000	1.000000	.000	0	0	UN
11	15	RSI	.137203	.137203	.137203	.137203	.137203	1.000000	1.000000	.000	0	0	UN
11	FFSUM = .9690		ROW CP TIME = .126										
	FORM FACTOR RESTART (RSO) RECORD = 60												
12	13	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
12	14	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
12	5	RSI	.034262	.034262	.034262	.034262	.034262	1.000000	1.000000	.000	0	0	UN
12	15	RSI	.096343	.096343	.096343	.096343	.096343	1.000000	1.000000	.000	0	0	UN
12	FFSUM = .9203		ROW CP TIME = .060										
	FORM FACTOR RESTART (RSO) RECORD = 61												
13	14	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
13	5	RSI	.011660	.011660	.011660	.011660	.011660	1.000000	1.000000	.000	0	0	UN
13	15	RSI	.050426	.050426	.050426	.050426	.050426	1.000000	1.000000	.000	0	0	UN
13	FFSUM = .8378		ROW CP TIME = .048										
	FORM FACTOR RESTART (RSO) RECORD = 62												
14	5	RSI	.056851	.056851	.056851	.056851	.056851	1.000000	1.000000	.000	0	0	UN
14	15	RSI	.107798	.107798	.107798	.107798	.107798	1.000000	1.000000	.000	0	0	UN
14	FFSUM = .9007		ROW CP TIME = .028										
	FORM FACTOR RESTART (RSO) RECORD = 63												

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
5	FFSUM = .5505	ROW CP TIME = .067										
	FORM FACTOR RESTART (RSO) RECORD = 64											
15	FFSUM = .5505	ROW CP TIME = .004										
	FORM FACTOR RESTART (RSO) RECORD = 65											
21	FFSUM = .0000	ROW CP TIME = .003										
	FORM FACTOR RESTART (RSO) RECORD = 66											
22	FFSUM = .0000	ROW CP TIME = .004										
	FORM FACTOR RESTART (RSO) RECORD = 67											
23	FFSUM = .0000	ROW CP TIME = .005										
	FORM FACTOR RESTART (RSO) RECORD = 68											
24	FFSUM = .0000	ROW CP TIME = .004										
	FORM FACTOR RESTART (RSO) RECORD = 69											

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ

25 FFSUM = .0000 ROW CP TIME = .068
FORM FACTOR RESTART (RSO) RECORD = 70

26 FFSUM = .0000 ROW CP TIME = .002
FORM FACTOR RESTART (RSO) RECORD = 71

* *

FF FORM FACTORS FOR CONFIGURATION CASE1 HAVE BEEN STORED ON RSO.
LAST RESTART RECORD WRITTEN = 71

* *

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM
1- .9690	2- .9203	3- .8378	4- .9007	11- .9690	12- .9203
13- .8378	14- .9007	5- .5505	15- .5505	21- .0000	22- .0000
23- .0000	24- .0000	25- .0000	26- .0000		

TOTAL TIME FOR FORM FACTOR SEGMENT 1.557

TOTAL TIME SINCE START OF RUN 91.175

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBWBND	BOTH	BOTH	WAVEBAND DEFINITION PARAMETER	(2HIR,3HSOL,4HBOTH)

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RESTARTING - GBIR - DATA FOR CONFIGURATION- CASE1 -FROM UNIT - 14

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RESTARTING - GBSO - DATA FOR CONFIGURATION- CASE1 -FROM UNIT - 14

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IR GRAY BODIES STORED FOR CONFIG. CASE1 LAST RESTART RECORD WRITTEN = 89

SOL GRAY BODIES STORED FOR CONFIG. CASE1 LAST RESTART RECORD WRITTEN = 107

TOTAL TIME TO COMPUTE GRAY BODIES .73

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	SPACE	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	999	32767	SPACE NODE ID NUMBER	N/A
SIGMA	.17-08	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	.7+00	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	.990	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	0	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
RADIATION CONDUCTOR GENERATION LINK.

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY SECONDARY

NONE

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADKS) CARDS

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED AND/OR BCDOU RADKS	-	-	1.	1.	2.	.35937-09$
PUNCHED AND/OR BCDOU RADKS	-	-	2.	1.	3.	.83913-09$
PUNCHED AND/OR BCDOU RADKS	-	-	3.	1.	4.	.73699-09$
PUNCHED AND/OR BCDOU RADKS	-	-	4.	1.	12.	.35937-09$
PUNCHED AND/OR BCDOU RADKS	-	-	5.	1.	5.	.56426-09$
PUNCHED AND/OR BCDOU RADKS	-	-	6.	2.	3.	.35685-09$
PUNCHED AND/OR BCDOU RADKS	-	-	7.	2.	4.	.35743-09$
PUNCHED AND/OR BCDOU RADKS	-	-	8.	2.	12.	.10306-09$
PUNCHED AND/OR BCDOU RADKS	-	-	9.	2.	5.	.19789-09$
PUNCHED AND/OR BCDOU RADKS	-	-	10.	3.	4.	.73080-09$
PUNCHED AND/OR BCDOU RADKS	-	-	11.	3.	12.	.35685-09$
PUNCHED AND/OR BCDOU RADKS	-	-	12.	3.	5.	.21024-09$
PUNCHED AND/OR BCDOU RADKS	-	-	13.	4.	12.	.35743-09$
PUNCHED AND/OR BCDOU RADKS	-	-	14.	4.	5.	.48604-09$
PUNCHED AND/OR BCDOU RADKS	-	-	15.	12.	5.	.19789-09$
PUNCHED AND/OR BCDOU RADKS	-	-	16.	1.	999.	.33302-08$
PUNCHED AND/OR BCDOU RADKS	-	-	17.	2.	999.	.17494-08$
PUNCHED AND/OR BCDOU RADKS	-	-	18.	3.	999.	.37054-08$
PUNCHED AND/OR BCDOU RADKS	-	-	19.	4.	999.	.35297-08$
PUNCHED AND/OR BCDOU RADKS	-	-	20.	12.	999.	.17494-08$
PUNCHED AND/OR BCDOU RADKS	-	-	21.	5.	999.	.45782-08$

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
RADIATION CONDUCTOR GENERATION LINK.

CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE BEFORE RKMIN SCREENING

1 - .10000+01	2 - .10000+01	3 - .10000+01	4 - .10000+01	12 - .10000+01	5 - .10000+01

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
RADIATION CONDUCTOR GENERATION LINK.

CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE AFTER RKMIN SCREENING

1 - .10000+01	2 - .10000+01	3 - .10000+01	4 - .10000+01	12 - .10000+01	5 - .10000+01

TOTAL TIME TO COMPUTE AND CONDENSE RADKS = .81

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
0	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.300+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.300+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10000

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

++NOTE++ AN EOF HAS BEEN ENCOUNTERED ON RSI. LAST RECORD NO. READ = 107

++NOTE++ INITIATING CALCULATIONS

-DICAL - RESTART DATA FOR CONFIGURATION -CASE1 - NOT FOUND ON UNIT-RSI-. INITIATING CALCULATIONS.

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10000 TRUE ANOMALY = .00000 TIME = .00000
♦♦♦♦ IN THE SUN ♦♦♦♦

NODE NUMBER	DIRECT FLUX(QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	SFTAPE	.001	9	0
2	.94028+02	.18576+03	.5062	CALC	.190	81	5
3	.00000	.10725+03	.0000	CALC	.307	64	8
4	.18576+03	.37152+03	.5000	SFTAPE	.372	81	0
11	.00000	.00000	.0000	SFTAPE	.420	9	0
12	.00000	.00000	.0000	SFTAPE	.469	9	0
13	.10055+02	.10725+03	.0938	CALC	.591	64	6
14	.10664+03	.37152+03	.2870	SFTAPE	.653	81	0
5	.00000	.00000	.0000	SFTAPE	.699	9	0
15	.00000	.00000	.0000	SFTAPE	.747	9	0
21	.00000	.00000	.0000	SFTAPE	.796	8	0
22	.10725+03	.10725+03	1.0000	CALC	.984	66	10
23	.18576+03	.18576+03	1.0000	CALC	1.158	81	6
24	.00000	.00000	.0000	SFTAPE	1.206	8	0
25	.00000	.00000	.0000	SFTAPE	1.255	9	0
26	.18687+03	.18687+03	1.0000	CALC	1.469	78	10

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DICOM

TOTAL ELAPSED TIME IN PROBLEM = 94.820 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10000 TRUE ANOMALY = .00000 TIME = .00000
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	SFTAPE	.000	.000	.391+02	.268+02	.000	.000	.001	66	9	9
2	SFTAPE	.000	.000	.400+02	.264+02	.000	.000	.309	66	9	9
3	SFTAPE	.000	.000	.402+02	.268+02	.000	.000	.556	61	9	9
4	SFTAPE	.000	.000	.000	.000	.000	.000	.670	52	9	9
11	SFTAPE	.000	.000	.391+02	.268+02	.000	.000	.935	66	9	9
12	SFTAPE	.000	.000	.382+02	.264+02	.000	.000	1.210	66	9	9
13	SFTAPE	.000	.000	.402+02	.268+02	.000	.000	1.463	61	9	9
14	SFTAPE	.000	.000	.000	.000	.000	.000	1.578	52	9	9
5	CALC	.231+02	.155+02	.834+02	.559+02	.277	.277	2.776	133	16	9
15	CALC	.233+02	.154+02	.834+02	.559+02	.279	.277	3.844	133	16	9
21	CALC	.110+03	.742+02	.110+03	.742+02	1.000	1.000	8.413	112	18	10
22	CALC	.402+02	.268+02	.402+02	.268+02	1.000	1.000	9.362	61	10	10
23	CALC	.400+02	.264+02	.400+02	.264+02	1.000	1.000	10.135	66	9	10
24	CALC	.391+02	.268+02	.391+02	.268+02	1.000	1.000	11.105	66	10	10
25	CALC	.382+02	.264+02	.382+02	.264+02	1.000	1.000	11.854	66	9	10
26	CALC	.659+01	.457+01	.659+01	.457+01	1.000	1.000	12.189	52	2	10

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICOMP

TOTAL ELAPSED TIME IN PROBLEM = 107.302 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 120

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10000

TOTAL TIME TO COMPUTE ABSORBED Q .26

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
90.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.000	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.900+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10001

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+09	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSO	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10001 TRUE ANOMALY = 90.00000 TIME = .36701
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX(QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	SFTAPE	.001	9	0
2	.00000	.00000	.0000	SFTAPE	.101	9	0
3	.00000	.42900+03	.0000	SFTAPE	.157	81	0
4	.00000	.00000	.0000	SFTAPE	.211	9	0
11	.00000	.00000	.0000	SFTAPE	.263	9	0
12	.00000	.00000	.0000	SFTAPE	.313	9	0
13	.00000	.42900+03	.0000	SFTAPE	.368	81	0
14	.00000	.00000	.0000	SFTAPE	.418	9	0
5	.30335+03	.30335+03	1.0000	SFTAPE	.482	81	0
15	.30335+03	.30335+03	1.0000	SFTAPE	.546	81	0
21	.00000	.00000	.0000	SFTAPE	.594	8	0
22	.42900+03	.42900+03	1.0000	SFTAPE	.659	78	0
23	.00000	.00000	.0000	SFTAPE	.704	9	0
24	.00000	.00000	.0000	SFTAPE	.750	8	0
25	.00000	.00000	.0000	SFTAPE	.800	9	0
26	.00000	.00000	.0000	SFTAPE	.854	8	0

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DICOM

TOTAL ELAPSED TIME IN PROBLEM = 109.145 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10001 TRUE ANOMALY = 90.00000 TIME = .36701
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	SFTAPE	.000	.000	.000	.000	.000	.000	.001	68	9	9
2	SFTAPE	.000	.000	.638+00	.000	.000	.000	.292	66	9	9
3	SFTAPE	.000	.000	.206+01	.000	.000	.000	.541	61	9	9
4	SFTAPE	.000	.000	.000	.000	.000	.000	.647	52	9	9
11	SFTAPE	.000	.000	.000	.000	.000	.000	.893	66	9	9
12	SFTAPE	.000	.000	.634+00	.000	.000	.000	1.138	66	9	9
13	SFTAPE	.000	.000	.206+01	.000	.000	.000	1.369	61	9	9
14	SFTAPE	.000	.000	.000	.000	.000	.000	1.475	52	9	9
5	CALC	.126+01	.155+02	.247+01	.000	.509	.000	2.652	133	16	9
15	CALC	.125+01	.154+02	.247+01	.000	.504	.000	3.706	133	16	9
21	CALC	.143+01	.742+02	.143+01	.000	1.000	.000	6.716	112	18	10
22	CALC	.206+01	.268+02	.206+01	.000	1.000	.000	7.326	61	10	10
23	CALC	.638+00	.264+02	.638+00	.000	1.000	.000	7.819	66	9	10
24	CALC	.000	.268+02	.000	.000	.000	.000	8.444	66	10	10
25	CALC	.634+00	.264+02	.634+00	.000	1.000	.000	8.895	66	9	10
26	CALC	.000	.457+01	.000	.000	.000	.000	9.109	52	2	10

NOTE--

FLUX VALUES FLAGGED (+++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICOMP

TOTAL ELAPSED TIME IN PROBLEM = 118.517 SECONDS
S,A,P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 139

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10001

TOTAL TIME TO COMPUTE ABSORBED Q .21

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD.NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
180.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.300+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.150+03	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10002

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO. 10002 TRUE ANOMALY = 180.00000 TIME = .73402
**** IN THE SHADE ****

NODE NUMBER	DIRECT FLUX(BDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	+++++++	.001	0	0
2	.00000	.00000	.0000	+++++++	.048	0	0
3	.00000	.00000	.0000	+++++++	.065	0	0
4	.00000	.00000	.0000	+++++++	.085	0	0
11	.00000	.00000	.0000	+++++++	.106	0	0
12	.00000	.00000	.0000	+++++++	.126	0	0
13	.00000	.00000	.0000	+++++++	.147	0	0
14	.00000	.00000	.0000	+++++++	.171	0	0
5	.00000	.00000	.0000	+++++++	.188	0	0
15	.00000	.00000	.0000	+++++++	.211	0	0
21	.00000	.00000	.0000	+++++++	.232	0	0
22	.00000	.00000	.0000	+++++++	.256	0	0
23	.00000	.00000	.0000	+++++++	.277	0	0
24	.00000	.00000	.0000	+++++++	.302	0	0
25	.00000	.00000	.0000	+++++++	.324	0	0
26	.00000	.00000	.0000	+++++++	.345	0	0

NOTE--

FLUX VALUES FLAGGED (+++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DICOM

TOTAL ELAPSED TIME IN PROBLEM = 119.611 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10002 TRUE ANOMALY = 180.00000 TIME = .73402
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	+++++++	.000	.000	.000	.000	.000	.000	.001	0	0	0
2	+++++++	.000	.000	.000	.000	.000	.000	.049	0	0	0
3	+++++++	.000	.000	.000	.000	.000	.000	.071	0	0	0
4	+++++++	.000	.000	.000	.000	.000	.000	.091	0	0	0
11	+++++++	.000	.000	.000	.000	.000	.000	.112	0	0	0
12	+++++++	.000	.000	.000	.000	.000	.000	.132	0	0	0
13	+++++++	.000	.000	.000	.000	.000	.000	.156	0	0	0
14	+++++++	.000	.000	.000	.000	.000	.000	.175	0	0	0
5	+++++++	.000	.155+02	.000	.000	.000	.000	.195	0	0	0
15	+++++++	.000	.154+02	.000	.000	.000	.000	.217	0	0	0
21	+++++++	.000	.742+02	.000	.000	.000	.000	.237	0	0	0
22	+++++++	.000	.268+02	.000	.000	.000	.000	.259	0	0	0
23	+++++++	.000	.264+02	.000	.000	.000	.000	.277	0	0	0
24	+++++++	.000	.268+02	.000	.000	.000	.000	.303	0	0	0
25	+++++++	.000	.264+02	.000	.000	.000	.000	.328	0	0	0
26	+++++++	.000	.457+01	.000	.000	.000	.000	.347	0	0	0

NOTE--

FLUX VALUES FLAGGED (+++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICOMP

TOTAL ELAPSED TIME IN PROBLEM = 119.991 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 158

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10002

TOTAL TIME TO COMPUTE ABSORBED Q .23

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.720	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.359+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.104+03	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10003

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10003 TRUE ANOMALY = 105.71977 TIME = .43111
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX(QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	SFTAPE	.000	9	0
2	.00000	.69478+01	.0000	SFTAPE	.059	9	0
3	.00000	.41697+03	.0000	SFTAPE	.092	81	0
4	.00000	.00000	.0000	SFTAPE	.127	9	0
11	.00000	.00000	.0000	SFTAPE	.155	9	0
12	.00000	.00000	.0000	SFTAPE	.186	9	0
13	.00000	.41697+03	.0000	SFTAPE	.220	81	0
14	.00000	.00000	.0000	SFTAPE	.250	9	0
5	.28468+03	.36602+03	.7778	CALC	.346	81	5
15	.28468+03	.36602+03	.7778	CALC	.445	81	5
21	.10066+03	.10066+03	1.0000	CALC	.558	55	10
22	.41696+03	.41696+03	1.0000	CALC	.683	78	10
23	.69478+01	.69478+01	1.0000	CALC	.721	9	5
24	.00000	.00000	.0000	SFTAPE	.759	8	0
25	.00000	.00000	.0000	SFTAPE	.793	9	0
26	.00000	.00000	.0000	SFTAPE	.827	8	0

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DICOM

TOTAL ELAPSED TIME IN PROBLEM = 121.615 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10003 TRUE ANOMALY = 105.71977 TIME = .43111
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	++++++	.000	.000	.000	.000	.000	.000	.000	0	8	0
2	++++++	.000	.000	.000	.000	.000	.000	.054	0	8	0
3	++++++	.000	.000	.000	.000	.000	.000	.073	0	8	0
4	++++++	.000	.000	.000	.000	.000	.000	.096	0	8	0
11	++++++	.000	.000	.000	.000	.000	.000	.118	0	8	0
12	++++++	.000	.000	.000	.000	.000	.000	.139	0	8	0
13	++++++	.000	.000	.000	.000	.000	.000	.165	0	8	0
14	++++++	.000	.000	.000	.000	.000	.000	.185	0	8	0
5	++++++	.000	.155+02	.000	.000	.000	.000	.206	0	8	0
15	++++++	.000	.154+02	.000	.000	.000	.000	.232	0	8	0
21	++++++	.000	.742+02	.000	.000	.000	.000	.257	0	8	0
22	++++++	.000	.268+02	.000	.000	.000	.000	.278	0	8	0
23	++++++	.000	.264+02	.000	.000	.000	.000	.299	0	8	0
24	++++++	.000	.268+02	.000	.000	.000	.000	.320	0	8	0
25	++++++	.000	.264+02	.000	.000	.000	.000	.340	0	8	0
26	++++++	.000	.457+01	.000	.000	.000	.000	.363	0	8	0

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICOMP

TOTAL ELAPSED TIME IN PROBLEM = 122.011 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 177

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10003

TOTAL TIME TO COMPUTE ABSORBED Q .17

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.920	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.359+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.104+03	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10004

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10004 TRUE ANOMALY = 105.91977 TIME = .43193
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX(QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	++++++	.000	0	0
2	.00000	.00000	.0000	++++++	.049	0	0
3	.00000	.00000	.0000	++++++	.071	0	0
4	.00000	.00000	.0000	++++++	.091	0	0
11	.00000	.00000	.0000	++++++	.110	0	0
12	.00000	.00000	.0000	++++++	.130	0	0
13	.00000	.00000	.0000	++++++	.149	0	0
14	.00000	.00000	.0000	++++++	.176	0	0
5	.00000	.00000	.0000	++++++	.197	0	0
15	.00000	.00000	.0000	++++++	.217	0	0
21	.00000	.00000	.0000	++++++	.238	0	0
22	.00000	.00000	.0000	++++++	.258	0	0
23	.00000	.00000	.0000	++++++	.275	0	0
24	.00000	.00000	.0000	++++++	.296	0	0
25	.00000	.00000	.0000	++++++	.319	0	0
26	.00000	.00000	.0000	++++++	.343	0	0

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DICOM

TOTAL ELAPSED TIME IN PROBLEM = 123.070 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10004 TRUE ANOMALY = 105.91977 TIME = .43193
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	++++++	.000	.000	.000	.000	.000	.000	.001	0	0	0
2	++++++	.000	.000	.000	.000	.000	.000	.048	0	0	0
3	++++++	.000	.000	.000	.000	.000	.000	.069	0	0	0
4	++++++	.000	.000	.000	.000	.000	.000	.094	0	0	0
11	++++++	.000	.000	.000	.000	.000	.000	.116	0	0	0
12	++++++	.000	.000	.000	.000	.000	.000	.141	0	0	0
13	++++++	.000	.000	.000	.000	.000	.000	.162	0	0	0
14	++++++	.000	.000	.000	.000	.000	.000	.182	0	0	0
5	++++++	.000	.155+02	.000	.000	.000	.000	.199	0	0	0
15	++++++	.000	.154+02	.000	.000	.000	.000	.223	0	0	0
21	++++++	.000	.742+02	.000	.000	.000	.000	.244	0	0	0
22	++++++	.000	.268+02	.000	.000	.000	.000	.268	0	0	0
23	++++++	.000	.264+02	.000	.000	.000	.000	.286	0	0	0
24	++++++	.000	.268+02	.000	.000	.000	.000	.306	0	0	0
25	++++++	.000	.264+02	.000	.000	.000	.000	.326	0	0	0
26	++++++	.000	.457+01	.000	.000	.000	.000	.349	0	0	0

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICOMP

TOTAL ELAPSED TIME IN PROBLEM = 123.457 SECONDS
S,A,P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 196

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10004

TOTAL TIME TO COMPUTE ABSORBED Q .26

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED Q OUT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IQOTME	1	1	TIME ARRAY ID NUMBER FLUX TABLES START AT IQOTME + 1	N/A
QOTAPE	NO	2HNO	PARAMETER TO OUTPUT TO BCD TAPE	(4HTAPE,2HNO)
QOPNCH	NO	2HNO	PUNCH/NO PUNCH PARAMETER FOR OUTPUT	(3HPUN,2HNO)
QOAMPF	1.0000	1.0	AREA MULTIPLYING FACTOR	N/A
QOFMPF	1.0000	1.0	FLUX MULTIPLYING FACTOR	N/A
QOTMPF	1.0000	1.0	TIME MULTIPLYING FACTOR	N/A
QOTYPE	BOTH	NONE	PARAMETER TO DETERMINE TYPE OF OUTPUT	(3HTAB,2HAV,4HBOTH)
IQOARY	ALL	NONE	STEP NO. ARRAY DIRECTIVE	(3HALL,ARRAY NAME)

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED HEAT RATE TABLES PUNCHED

Q = INPUT * RMPF WHERE RMPF = .10000+01
TIME = INPUT * TMPF WHERE TMPF = .10000+01
AREA IS ON SUBROUTINE CALL CARDS

```
    1$ TIME ARRAY
   .000   ,   .367+00,   .431+00,   .432+00,   .734+00
ENDS
    2$  HEAT RATE ARRAY
   .675+01,   .586+01,   .549+01,   .283+00,   .283+00
ENDS
    3$  HEAT RATE ARRAY
   .893+02,   .411+01,   .385+01,   .199+00,   .199+00
ENDS
    4$  HEAT RATE ARRAY
   .619+01,   .218+01,   .205+01,   .105+00,   .105+00
ENDS
    5$  HEAT RATE ARRAY
   .170+03,   .505+01,   .473+01,   .244+00,   .244+00
ENDS
    6$  HEAT RATE ARRAY
   .412+01,   .586+01,   .549+01,   .283+00,   .283+00
ENDS
    7$  HEAT RATE ARRAY
   .407+01,   .411+01,   .385+01,   .198+00,   .198+00
ENDS
    8$  HEAT RATE ARRAY
   .125+02,   .218+01,   .205+01,   .105+00,   .105+00
ENDS
    9$  HEAT RATE ARRAY
   .974+02,   .505+01,   .473+01,   .244+00,   .244+00
ENDS
   10$  HEAT RATE ARRAY
   .381+02,   .288+03,   .270+03,   .139+02,   .139+02
ENDS
   11$  HEAT RATE ARRAY
   .374+02,   .288+03,   .270+03,   .139+02,   .139+02
ENDS
   12$  HEAT RATE ARRAY
   .183+03,   .138+03,   .179+03,   .138+03,   .138+03
ENDS
   13$  HEAT RATE ARRAY
   .111+03,   .227+03,   .222+03,   .497+02,   .497+02
ENDS
```

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED HEAT RATE TABLES PUNCHED

Q = INPUT * RMPF WHERE RMPF = .10000+01
TIME = INPUT * TMPF WHERE TMPF = .10000+01
AREA IS ON SUBROUTINE CALL CARDS

```
   14$ HEAT RATE ARRAY
   .717+02,   .249+02,   .262+02,   .247+02,   .247+02
END$
   15$ HEAT RATE ARRAY
   .658+02,   .497+02,   .497+02,   .497+02,   .497+02
END$
   16$ HEAT RATE ARRAY
   .327+02,   .249+02,   .247+02,   .247+02,   .247+02
END$
   17$ HEAT RATE ARRAY
   .882+02,   .847+01,   .847+01,   .847+01,   .847+01
END$
```

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

DAIINC SUBROUTINE CALL CARDS

```
                        AREA = INPUT (UNITS) * ANPF  WHERE AMPF =     .10000+01
DAIINC(1.46792175E 0,TIMEM,A1    ,A2   ,1.00000000E 0,Q1   )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A3   ,1.00000000E 0,Q2   )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A4   ,1.00000000E 0,Q3   )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A5   ,1.00000000E 0,Q4   )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A6   ,1.00000000E 0,Q11  )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A7   ,1.00000000E 0,Q12  )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A8   ,1.00000000E 0,Q13  )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A9   ,1.00000000E 0,Q14  )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A10  ,1.00000000E 0,Q5   )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A11  ,1.00000000E 0,Q15  )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A12  ,1.00000000E 0,Q21  )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A13  ,1.00000000E 0,Q22  )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A14  ,1.00000000E 0,Q23  )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A15  ,1.00000000E 0,Q24  )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A16  ,1.00000000E 0,Q25  )$
DAIINC(1.46792175E 0,TIMEM,A1    ,A17  ,1.00000000E 0,Q26  )$
```

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

AVERAGE ORBITAL HEATING RATE AND AREA CARDS PUNCHED

VALUES ARE RATE = INPUT (UNITS) * RMPF WHERE RMPF = .10000+01
VALUES ARE AREA = INPUT (UNITS) * AMPF WHERE AMPF = .10000+01

Q1	=3.76739010E	0
Q2	=2.37882507E	1
Q3	=2.32315344E	0
Q4	=4.42941165E	1
Q11	=3.10908234E	0
Q12	=2.47663051E	0
Q13	=3.90220493E	0
Q14	=2.61343932E	1
Q5	=1.11914322E	2
Q15	=1.11704981E	2
Q21	=1.51001154E	2
Q22	=1.24700665E	2
Q23	=3.65944815E	1
Q24	=5.37007308E	1
Q25	=2.67737952E	1
Q26	=2.84040403E	1

TOTAL TIME TO COMPUTE ABSORBED Q OUT .59

MODEL=SAMPLE CONFIG=CASE2 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED Q OUT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IQOTME	1	1	TIME ARRAY ID NUMBER FLUX TABLES START AT IQOTME + 1	N/A
QOTAPE	NO	2HNO	PARAMETER TO OUTPUT TO BCD TAPE	(4HTAPE,2HNO)
QOPNCH	NO	2HNO	PUNCH/NO PUNCH PARAMETER FOR OUTPUT	(3HPUN,2HNO)
QOAMPF	1.0000	1.0	AREA MULTIPLYING FACTOR	N/A
QOFMPF	1.0000	1.0	FLUX MULTIPLYING FACTOR	N/A
QOTMPF	1.0000	1.0	TIME MULTIPLYING FACTOR	N/A
QOTYPE	BOTH	NONE	PARAMETER TO DETERMINE TYPE OF OUTPUT	(3HTAB,2HAV,4HBOTH)
IQOARY	ALL	NONE	STEP NO. ARRAY DIRECTIVE	(3HALL,ARRAY NAME)

MODEL=SAMPLE CONFIG=CASE2 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED HEAT RATE TABLES PUNCHED

Q = INPUT * RMPF WHERE RMPF = .10000+01
TIME = INPUT * TMPF WHERE TMPF = .10000+01
AREA IS ON SUBROUTINE CALL CARDS

```
    1$ TIME ARRAY
   .000   ,   .367+00,   .431+00,   .432+00,   .734+00
ENDS
    2$  HEAT RATE ARRAY
   .121+03,   .239+03,   .233+03,   .503+02,   .503+02
ENDS
    3$  HEAT RATE ARRAY
   .122+03,   .290+02,   .286+02,   .249+02,   .249+02
ENDS
    4$  HEAT RATE ARRAY
   .845+02,   .540+02,   .539+02,   .499+02,   .499+02
ENDS
    5$  HEAT RATE ARRAY
   .450+03,   .148+03,   .189+03,   .138+03,   .138+03
ENDS
    6$  HEAT RATE ARRAY
   .758+02,   .290+02,   .300+02,   .249+02,   .249+02
ENDS
    7$  HEAT RATE ARRAY
   .164+03,   .585+03,   .549+03,   .363+02,   .363+02
ENDS
```

MODEL=SAMPLE CONFIG=CASE2 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

DAIIMC SUBROUTINE CALL CARDS

```
                        AREA = INPUT (UNITS) * AMPF  WHERE AMPF =    .10000+01
DAIIMC(1.46792175E 0,TIMEM,A1    ,A2    ,1.00000000E 0,Q1    )$
DAIIMC(1.46792175E 0,TIMEM,A1    ,A3    ,1.00000000E 0,Q2    )$
DAIIMC(1.46792175E 0,TIMEM,A1    ,A4    ,1.00000000E 0,Q3    )$
DAIIMC(1.46792175E 0,TIMEM,A1    ,A5    ,1.00000000E 0,Q4    )$
DAIIMC(1.46792175E 0,TIMEM,A1    ,A6    ,1.00000000E 0,Q12   )$
DAIIMC(1.46792175E 0,TIMEM,A1    ,A7    ,1.00000000E 0,Q5    )$
```

MODEL=SAMPLE CONFIG=CASE2 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ABSORBED Q OUTPUT COMPUTATION LINK.

AVERAGE ORBITAL HEATING RATE AND AREA CARDS PUNCHED

VALUES ARE RATE = INPUT (UNITS) * RMPF WHERE RMPF = .10000+01
VALUES ARE AREA = INPUT (UNITS) * AMPF WHERE AMPF = .10000+01

Q1	=1.31577134E	2
Q2	=5.05620456E	1
Q3	=5.99260890E	1
Q4	=2.21429661E	2
Q12	=3.90711117E	1
Q5	=2.52023339E	2

TOTAL TIME TO COMPUTE ABSORBED Q OUT .40

MODEL=SAMPLE CONFIG=CASE2 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ORBIT PLOTTER DATA OUTPUT

ODATA, ODATAS INPUT

PARAMETER	DESCRIPTION	OPTION *,	DEFAULT
NV	VIEW NUMBER	1-6	1
VU	VIEW	3HALL 3H3-D 4HBETA 5HCIGMA 3HSUN 3HGEN	3HALL
SCL	VEHICLE SURFACE SCALING FACTOR INPUT IN INCHES (MAX VALUE = (3.15-SCLR)/2.)	REAL NO.	(3.15-SCLR)/2.
SCLR	ORBIT RADIUS INPUT IN INCHES FROM CENTER OF PLOT (RECOMMENDED VALUE = 1.6)	REAL NO.	8.*RPLN/7.
RPLN	PLANET RADIUS INPUT IN INCHES FROM CENTER OF PLOT (RECOMMENDED VALUE = 1.4)	REAL NO.	1.4
TRUEAN	TRUE ANOMALY (PRESENT VEHICLE POSITION IN DEGREES FROM PERIAPSIS)	REAL NO.	COMPUTED IF TIME Δ 0.
TIMEST	TIME OF PERIAPSIS PASSAGE	REAL NO.	NONE
TIME	TIME AT PRESENT VEHICLE POSITION	REAL NO.	COMPUTED IF TRUEAN Δ 0.
ISELN	ARRAY NAME CONTAINING NUMBER OF SURFACES TO BE SELECTIVELY PLOTTED	ARRAY NAME	PLOTS ALL SURFACES
ITIT	ARRAY NAME OF PLOT TITLE	ARRAY NAME	USES JOB TITLE
IROTX, IROTY, IROTZ	ORDER OF ROTATIONS (FOR IVU = 3HGEN)	1,2,3 (ANY ORDER)	1,2,3
ROTX, ROTY, ROTZ,	VIEW ROTATIONS (FOR IVU = 3HGEN)	0 : ANG : 360	0.0 0.0 0.0

*INPUT ZERO FOR DEFAULT ACTION

CALLING SEQUENCE&,

```
CALL ODATA (NV, VU, SCL, SCLR, RPLN, TRUEAN, TIMEST, TIME, ISELN, ITIT, IROTX, IROTY, IROTZ, ROTX, ROTY, ROTZ)

OR

CALL ODATAS (NV, VU, SCL, SCLR, RPLN, TRUEAN, TIMEST, TIME)
```

NOTES: IF NO CALLS TO ODATA/ODATAS ARE MADE, A CALL TO OPLOT WILL RESULT IN ALL VIEWS BEING AUTOMATICALLY SCALED AND GENERATED.

MODEL=SAMPLE CONFIG=CASE2 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ORBIT PLOTTER DATA OUTPUT

MODEL=SAMPLE CONFIG=CASE2 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ORBIT PLOTTER DATA OUTPUT

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60900+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.00000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX, IROTY, IROTZ,		1 2 3	
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES (ABOUT CCS Z-AXIS CW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE

MODEL=SAMPLE CONFIG=CASE2 STEP=10006 SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT
ORBIT PLOTTER DATA OUTPUT

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

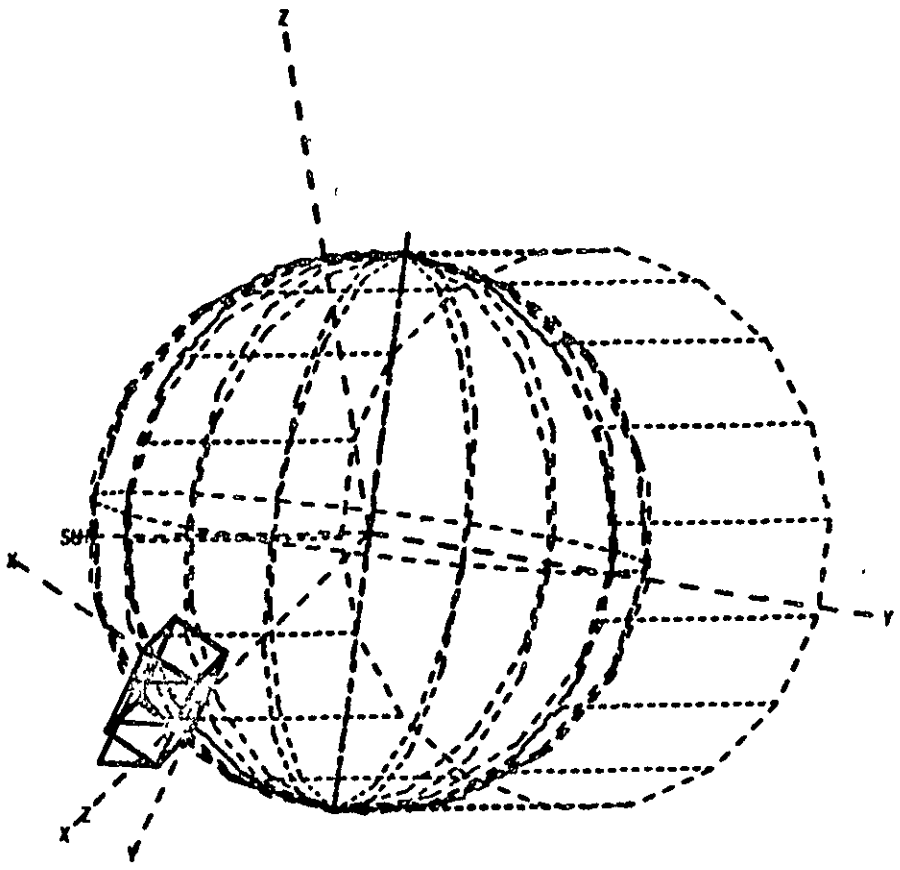
++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.10000+16	PLANET-SUN DISTANCE	PSD		.14679+01	ORBIT PERIOD	PERIOD
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

```
VIEW=3-D          SCALE= .3037      VIEW NUMBER=1
VIEW=BETA         SCALE= .3037      VIEW NUMBER=1
VIEW=CIGMA        SCALE= .3037      VIEW NUMBER=1
VIEW=SUN VIEW     SCALE= .3037      VIEW NUMBER=1
VIEW=3-D          SCALE= .3037      VIEW NUMBER=2
VIEW=BETA         SCALE= .3037      VIEW NUMBER=2
VIEW=CIGMA        SCALE= .3037      VIEW NUMBER=2
VIEW=SUN VIEW     SCALE= .3037      VIEW NUMBER=2
VIEW=3-D          SCALE= .3037      VIEW NUMBER=3
VIEW=BETA         SCALE= .3037      VIEW NUMBER=3
VIEW=CIGMA        SCALE= .3037      VIEW NUMBER=3
VIEW=SUN VIEW     SCALE= .3037      VIEW NUMBER=3
```

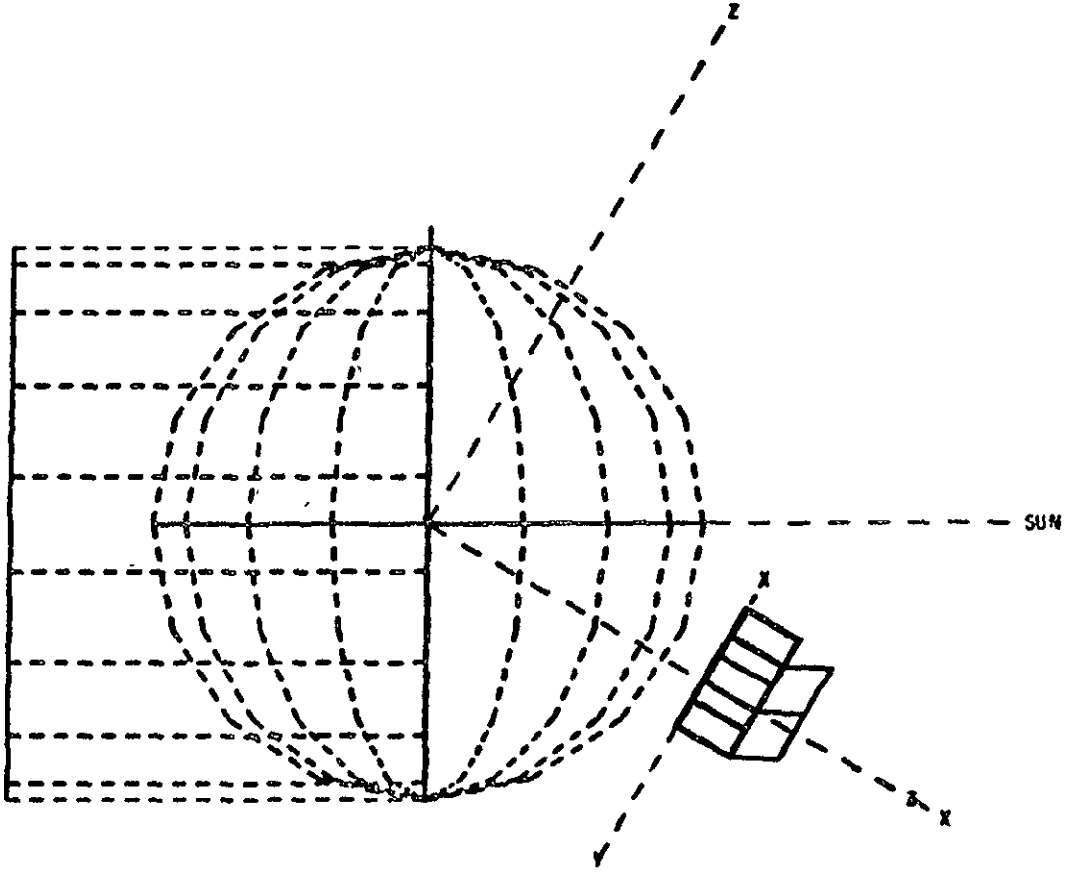
```
 IT HAS BEEN A PLEASURE SERVING YOU.  I HOPE YOU ENJOY YOUR 12. FRAMES OF S-C 4060 OUTPUT.
 ++NOTE++ TRASYS GENERATED   12 PLOT FRAMES
 NORMAL TERMINATION BY PROCESSOR


@PHD,PLEB

@BRKPT PRINT$
```

SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



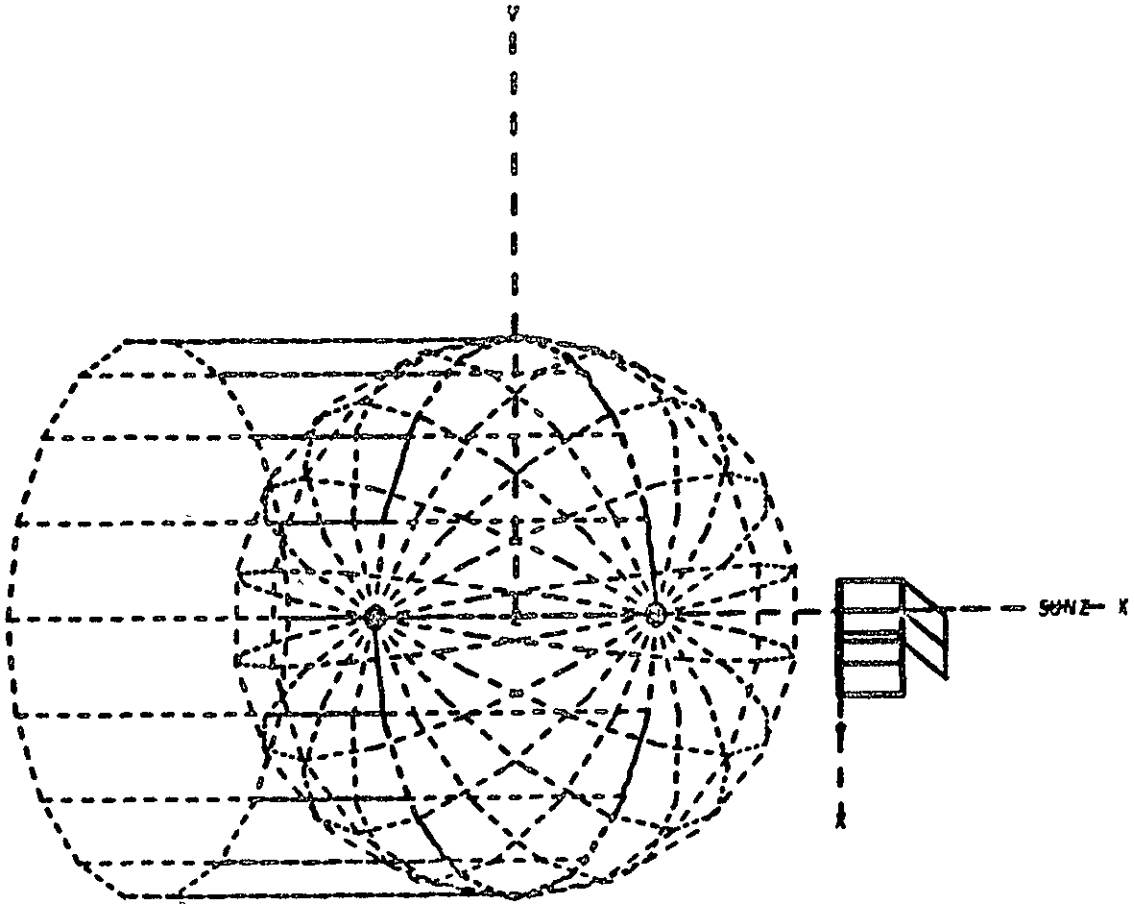
VIEW = 3-D
SCALE = .3037
TIME = .000

SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



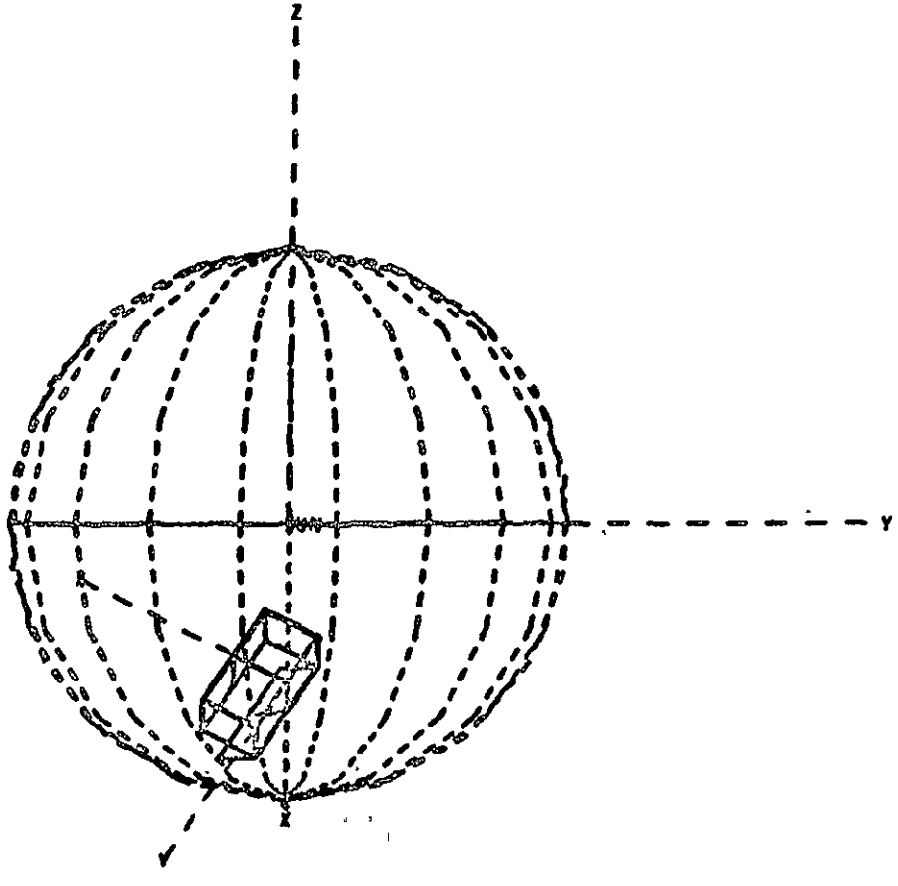
VIEW = BETA
SCALE = .3037
TIME = .000

SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORDGEN/OPLOT



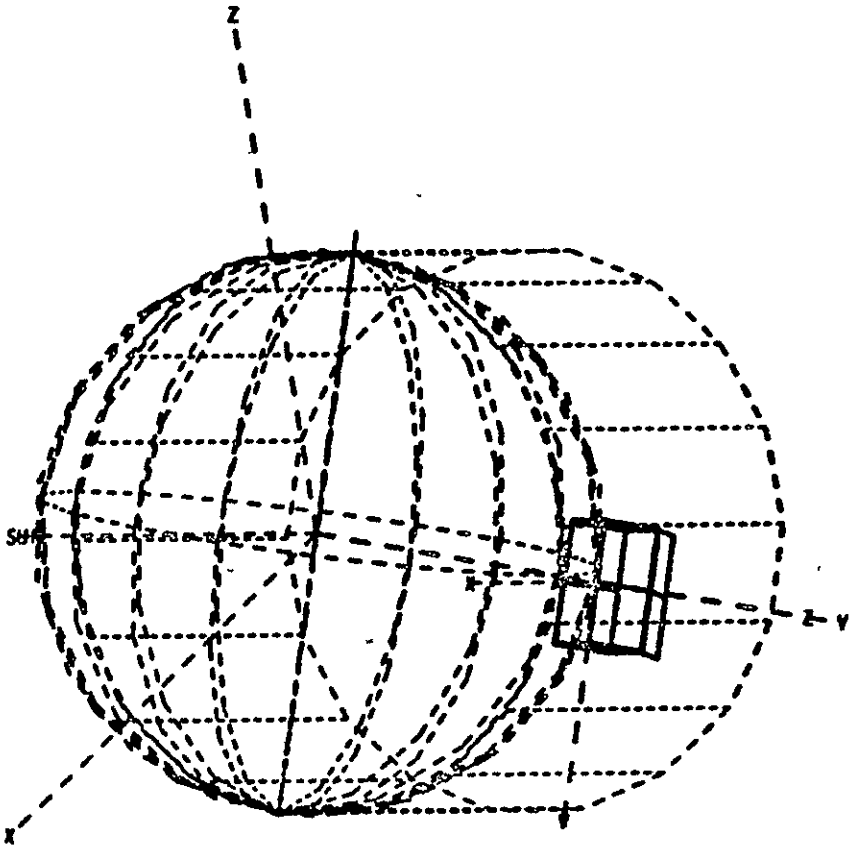
VIEW = CIGMA
SCALE = .3037
TIME = .000

SAMPLE CASE 2 - /SFCAL/FFCAL/GDCAL/ACCAL/ORBGEN/OPLOT



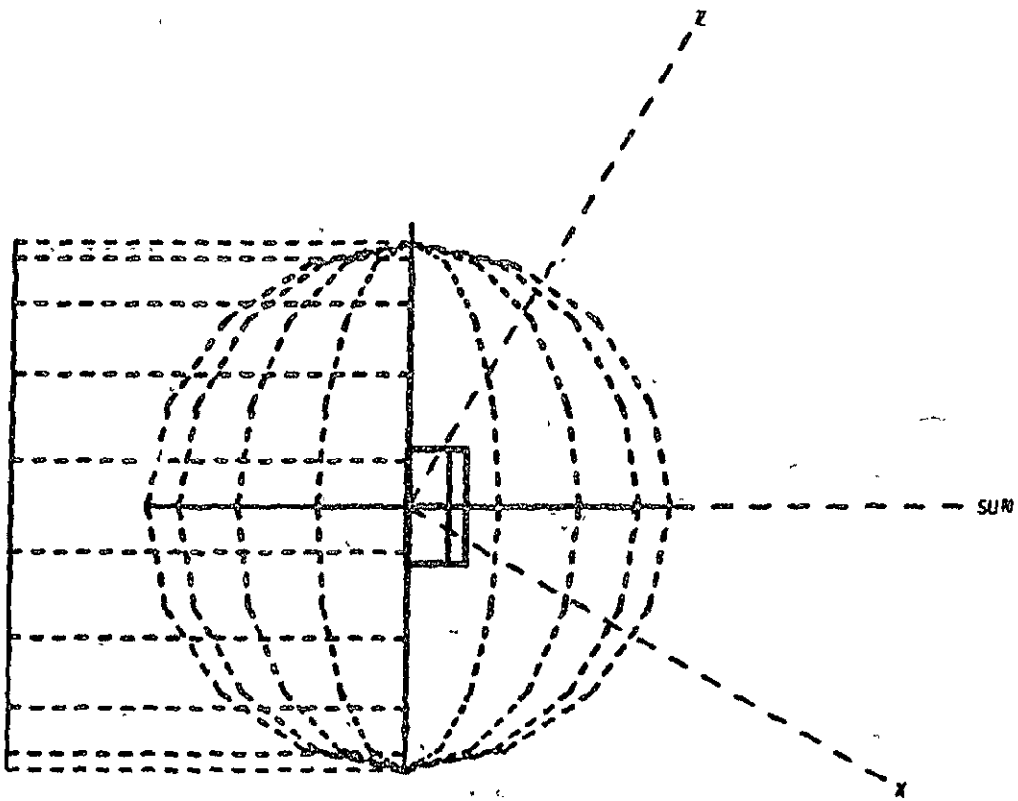
VIEW = SUN VIEW
SCALE = .3037
TIME = .000

SAMPLE CASE 2 - /SFCAL/FFCAL/BBCAL/RCCAL/ORBGEN/OPLOT



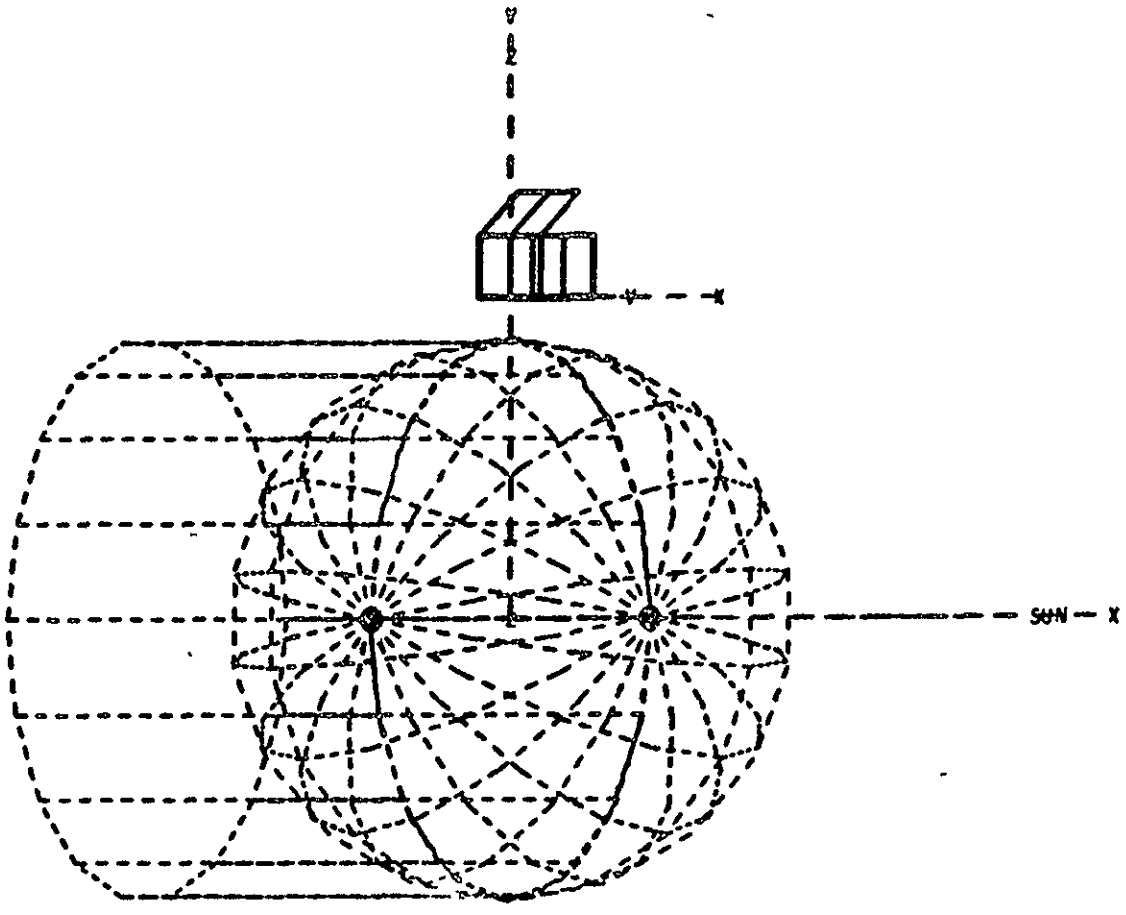
VIEW = 3-D
SCALE = .3037
TIME = .000

SAMPLE CASE 2 - /SFCAL/FFCAL/GDCAL/RCCAL/ORBGEN/OPLOT



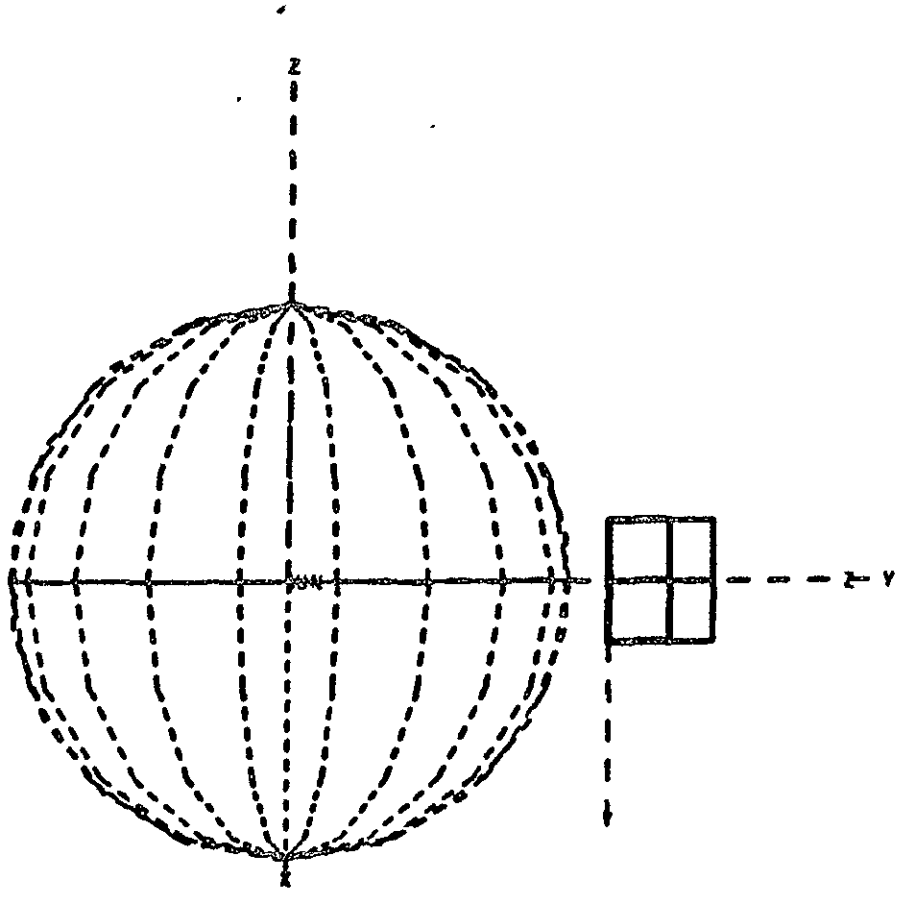
VIEW = BETA
SCALE = .3037
TIME = .000

SAMPLE CASE 2 - /SFCAL/FFCAL/GSCAL/MCCAL/ORBGEN/OPLOT



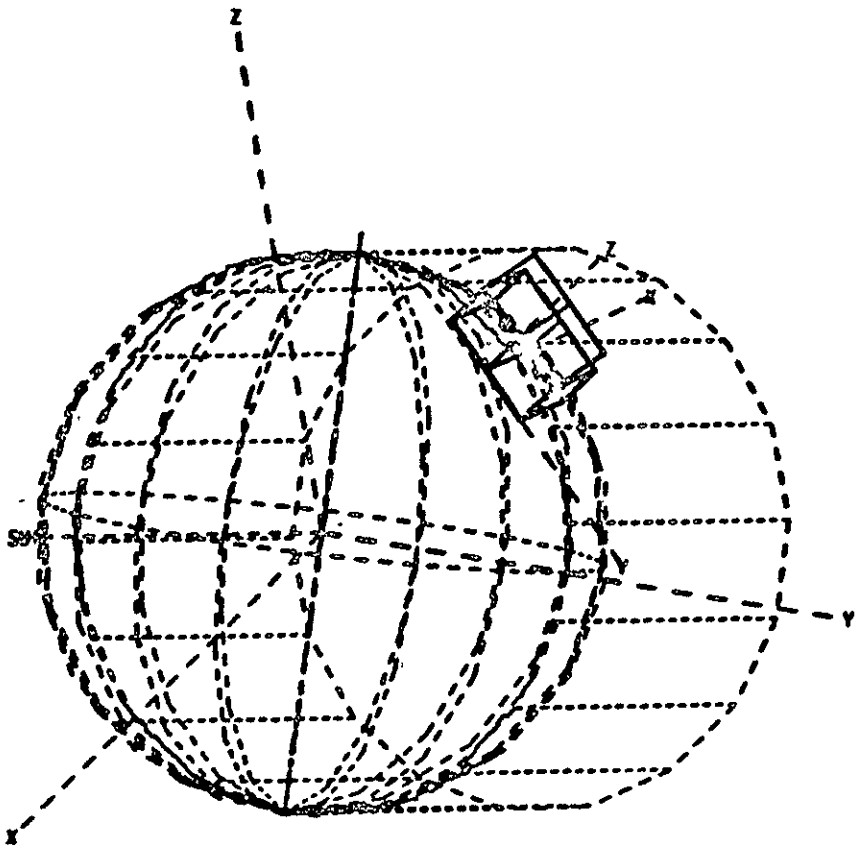
VIEW = CIGMA
SCALE = .3037
TIME = .000

SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



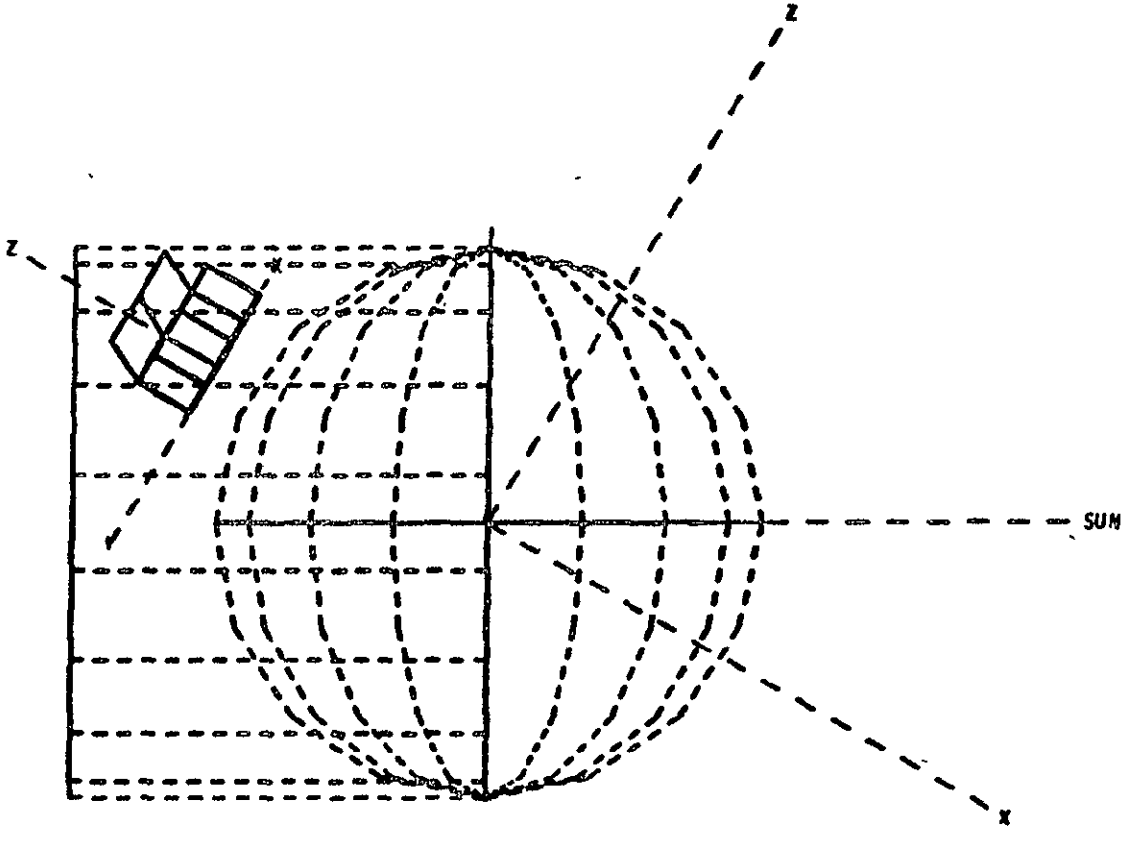
VIEW = SUN VIEW
SCALE = .3037
TIME = .000

SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/ACCAL/OMGEN/OPLOT



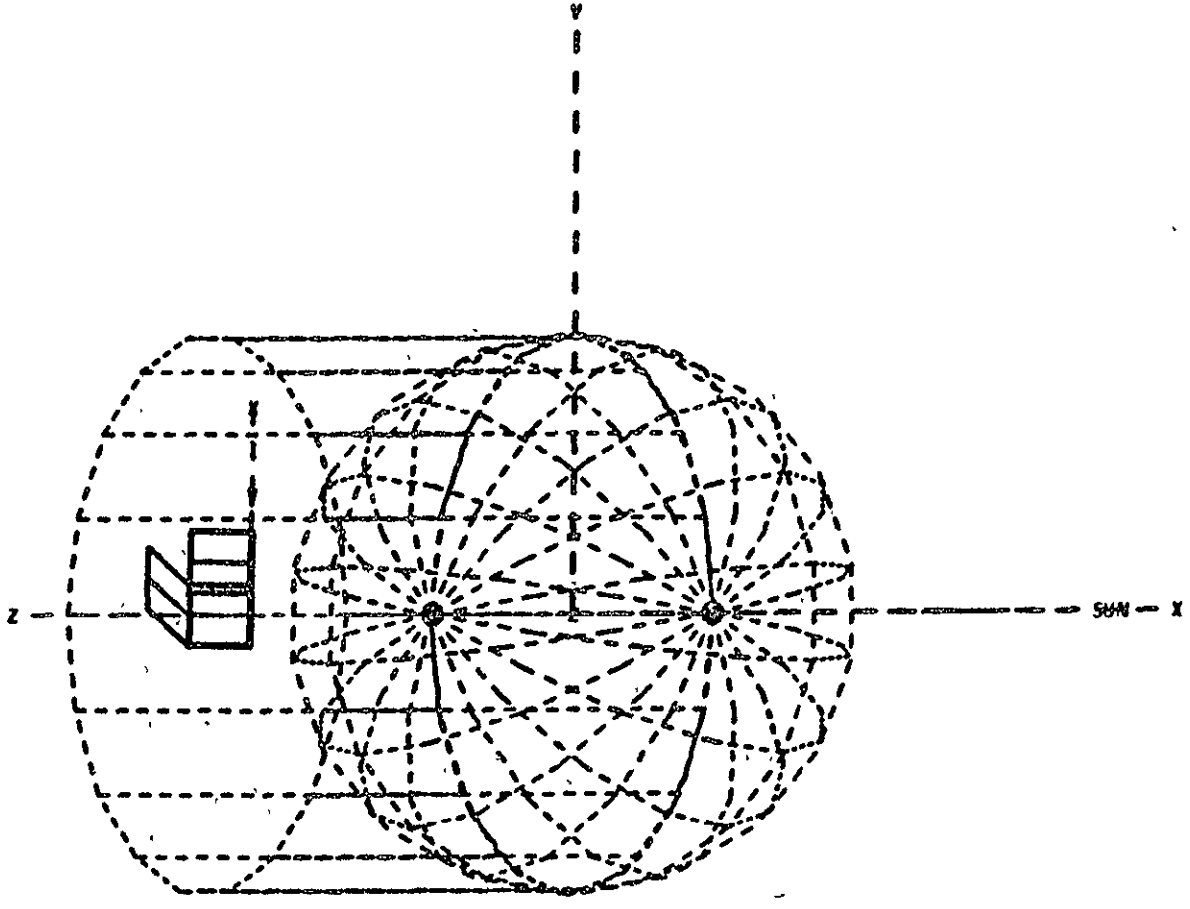
VIEW = 3-D
SCALE = .3037
TIME = .000

SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



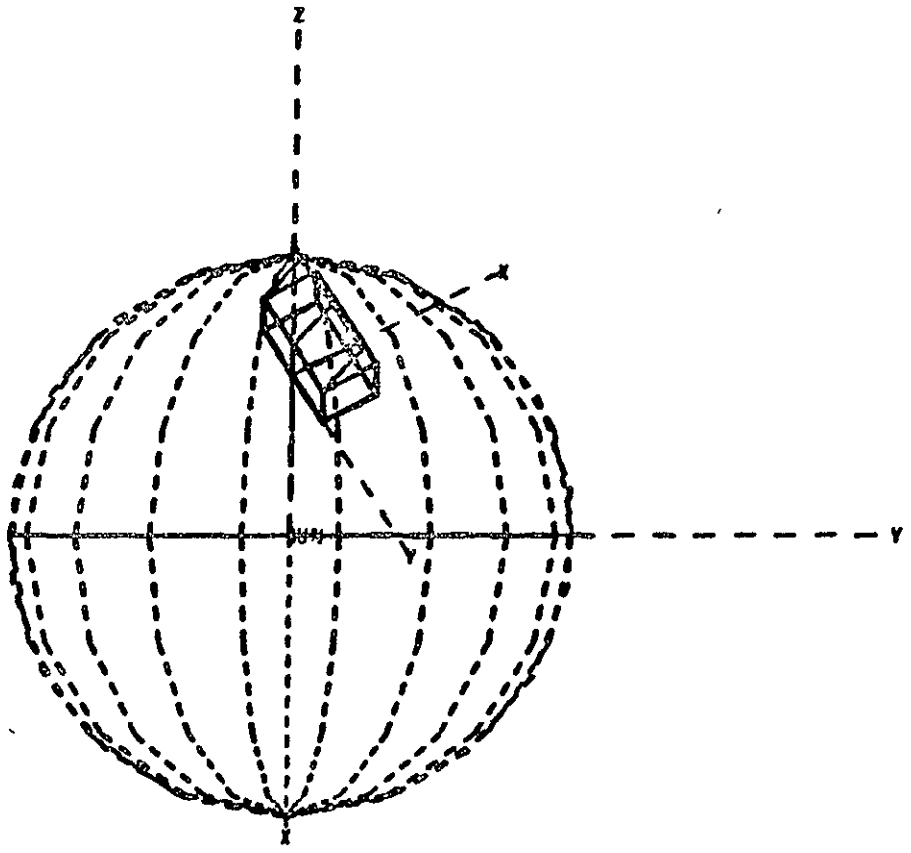
VIEW = BETA
SCALE = .3037
TIME = .000

SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



VIEW = CIGMA
SCALE = .3037
TIME = .000

SAMPLE CASE 2 - /SFCAL/FFCAL/GBCAL/RCCAL/ORBGEN/OPLOT



VIEW = SUN VIEW
SCALE = .3037
TIME = .000

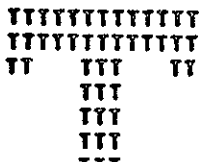
SAMPLE CASE 3

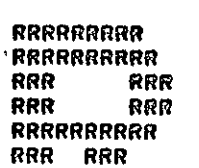
```
@ED,R VOGTB.CASE3
FILE IN FIELD 1 DISABLED--ACCEPTED
FILE IN FIELD 1 IN USE BY ANOTHER RUN
READ-ONLY MODE
CASE UPPER ASSUMED
ED 14.02-06/28-20:39-(0,)
EDIT
      1:@RUN,R/R RVHH03,3240-F261-C,ES3-N03711,06,300                NO DECK VOGT
     10:@ASG,T RSI.,8C,X03562
     11:@ADD ES3-TRASYS*TRASYS.STARTH
     12:@SETC 0100
     13:@ADD PREPRO
     14:HEADER OPTIONS DATA
     15:TITLE  SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
     16:C      SKIPPING SHADOW FACTOER TABLES ON RSI.
     17:C      RESTARTING FORM FACTORS.
     18:C      COMBINING FORM FACTORS.
     19:C      CALCULATING DIRECT INCIDENT FLUXES WITHOUT THE USE OF
     20:C      SHADOW FACTOR TABLES.
     21:C
     22:       MODEL        = SAMPLE
     23:       RSI          = RSTSAM2
     24:       RSO          = RSTSAM3
     25:HEADER EDIT DATA
     26:*D,153,156
     27:C
     28:C-----SKIP THE SHADOW FACTOR TABLES ON RSI.  THIS IS ACCOMPLISHED
     29:C-----BY REPLACING THE ¤L      SFCAL¤ CARD WITH A ¤CALL RSTON¤ CARD
     30:C-----TO SET THE SKIP FLAG
     31:C
     32:       CALL RSTON
     33:*D,163,166
     34:C
     35:C-----COMBINE FORM FACTORS
     36:C
     37:       CALL RSTOFF
     38:       CALL CMDATA(0.5HCASE3,2HFF,0,0)
     39:L      CMCAL
     40:C
     41:C-----CALCULATE GRAY BODY MATRICES USING COMBINED FORM FACTORS.
     42:C
     43:       CALL GBDATA(BOTH,0,CM)
     44:*D,171
     45:       CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)
     46:*D,187,193
     47:@PMD,BLEP
     48:@ASG,T/S RSO.,8C,RSO,92,RSO APPENDIX H, CASE 3.
     49.@ADD PROCSS
     50:@BRKPT PRINT$
     57:@FIN
NO CORRECTIONS APPLIED.
```

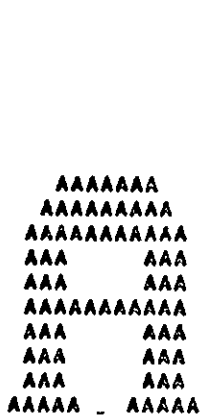


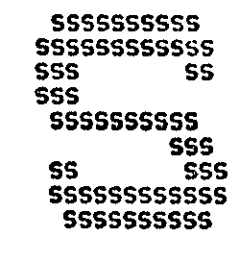
```
@ASG,T RSI.,8C,X03562
```

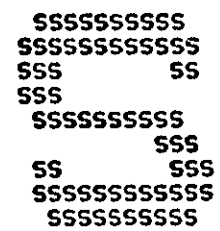
NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
UNIVAC 1110/EXEC 8











TRASYS II

PRE-PROCESSOR EXECUTION

VERSION.MODIFICATION ... UC2E3
MODIFICATION DATE 052678

DATE OF RUN 062878
TIME OF RUN 205235
JOB NUMBER RVMH03

```
MODEL = N/A
OPTION AND TITLE DATA BLOCKS

CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT             HEADER OPTIONS DATA
INPUT             TITLE  SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORDGEN
INPUT             C      SKIPPING SHADOW FACTOER TABLES ON RSI.
INPUT             C      RESTARTING FORM FACTORS.
INPUT             C      COMBINING FORM FACTORS.
INPUT             C      CALCULATING DIRECT INCIDENT FLUXES WITHOUT THE USE OF
INPUT             C      SHADOW FACTOR TABLES.
INPUT             C
INPUT                    MODEL       = SAMPLE
INPUT                    RSI         = RSTSAM2
INPUT                    RSO         = RSTSAM3
```

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
TRASYS INFORMATION TO USER

```
**********************************************************
*                                                        *
*    A T T E N T I O N   T R A S Y S   U S E R S         *
*                                                        *
**********************************************************
```

THIS SECTION OF THE TRASYS PRINTOUT WAS DEVISED TO INFORM THE TRASYS USERS OF THE STATUS OF THE TRASYS PROGRAM WITHOUT HAVING TO PRINTOUT ALL THE STATUS INFORMATION ON EVERY RUN. TO OBTAIN ADDITIONAL INFORMATION ON HOW TO USE THIS SECTION OF THE TRASYS PRINTOUT, PLACE A (INFO=INFO) IN THE OPTIONS DATA BLOCK.

FOR TRASYS ASSISTANCE AND/OR POSSIBLE TRASYS PROGRAM PROBLEMS, PLEASE CONTACT BOB VOGT AT JSC-2326.

NEHRL 08/29/77 DOCUMENTATION ADDITION

THE TRASYS -N- VERSION HAS BEEN UPDATED TO THE UC2E2 AND UL2E4 LEVEL.
SEE LATEST USERS MANUAL FOR INFORMATION ON USER-CALLED SUBROUTINE ARGUMENT CHANGES AND NEW CAPABILITIES.

END OF TRASYS INFORMATION FILE

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
MODEL HISTORY

MODEL NAME ..... SAMPLE

MODEL TITLE ..... SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN

MOD LABEL	RUN JOB NUMBER	RUN DATA	RUN TIME	RSI TAPE	RSO TAPE	RTI TAPE	RTO TAPE	CHERG TAPE	EMERO TAPE	BCDOU TAPE	TRAJ TAPE	USER1 TAPE	USER2 TAPE
AA	RVMH01	062278	202625		RSTSAM								
AB	RVMH02	062778	005225	RSTSAM	RSTSAM								
AC	RVMH03	062878	205238	RSTSAM	RSTSAM								

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
SOURCE DATA EDIT DIRECTIVES

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

                 HEADER EDIT DATA
****             *D,153,156
   D             C                                                                          OLD-      153     AA
   D             C-----READ AND PRINT THE SHADOW FACTOR TABLES FROM RSI FOR USE IN           OLD-      154     AB
   D             C-----SAMPLE CASE 2 IN THE CALCULATION OF DIRECT FLUXES.                    OLD-      155     AA
   D             C                                                                          OLD-      156     AA
  I              C                                                                  153                     AC
  I              C-----SKIP THE SHADOW FACTOR TABLES ON RSI.  THIS IS ACCOMPLISHED   154                     AC
  I              C-----BY REPLACING THE 'CL      SFCAL' CARD WITH A 'CALL RSTON' CARD155                     AC
  I              C-----TO SET THE SKIP FLAG                                         156                     AC
  I              C                                                                  157                     AC
  I                    CALL RSTON                                                   158                     AC
****             *D,163,166
   D             C                                                                          OLD-      163     AA
   D             C-----READ THE GRAY BODY MATRICES FROM RSI                                 OLD-      164     AB
   D             C                                                                          OLD-      165     AA
   D                    CALL GBDATA(BOTH,0,FF)                                             OLD-      166     AA
  I              C                                                                  165                     AC
  I              C-----COMBINE FORM FACTORS                                         166                     AC
  I              C                                                                  167                     AC
  I                    CALL RSTOFF                                                  168                     AC
  I                    CALL CHDATA(0,5HCASE3,2HFF,0,0)                              169                     AC
  I              L     CHCAL                                                        170                     AC
  I              C                                                                  171                     AC
  I              C-----CALCULATE GRAY BODY MATRICES USING COMBINED FORM FACTORS.    172                     AC
  I              C                                                                  173                     AC
  I                    CALL GBDATA(BOTH,0,CH)                                       174                     AC
****             *D,171
   D                    CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,5HCASE2)                 OLD-      171     AB
  I                     CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)             179                     AC
****             *D,187,193
   D             C                                                                          OLD-      187     AB
   D             C-----MAKE ORBIT PLOTS                                                     OLD-      188     AB
   D             C                                                                          OLD-      189     AB
   D                       CALL ODATAS(1,0,0,0,0,0,0,0)                                    OLD-      190     AB
   D                       CALL ODATAS(2,0,0,0,0,90.,0,0)                                  OLD-      191     AB
   D                       CALL ODATAS(3,0,0,0,0,180.,0,0)                                 OLD-      192     AB
   D             L         OPLOT                                                           OLD-      193     AB
```

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
SURFACE DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
RSI             HEADER SURFACE DATA                                                                  1  OLD-      1   AA
RSI             C                                                                                    2  OLD-      2   AA
RSI             C------THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5                     3  OLD-      3   AA
RSI             C------WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT                  4  OLD-      4   AA
RSI             C------CASES.                                                                        5  OLD-      5   AA
RSI             C                                                                                    6  OLD-      6   AA
RSI             BCS     BOXINR                                                                       7  OLD-      7   AA
RSI             S       SURFN       = 1                                                              8  OLD-      8   AA
RSI                     TYPE        = RECT                                                           9  OLD-      9   AA
RSI                     ACTIVE      = BOTTOM                                                        10  OLD-     10   AA
RSI                     PROP        = 0.9,0.9                                                       11  OLD-     11   AA
RSI                     P1          = 1.0, 0.0, 1.0                                                 12  OLD-     12   AA
RSI                     P2          = 1.0, 0.0, 0.0                                                 13  OLD-     13   AA
RSI                     P3          = 1.0, 1.0, 0.0                                                 14  OLD-     14   AA
RSI                     COM         = ' INNER RIGHT FRONT '                                         15  OLD-     15   AA
RSI             S       SURFN       = 2                                                             16  OLD-     16   AA
RSI                     TYPE        = RECT                                                          17  OLD-     17   AA
RSI                     ACTIVE      = BOTTOM                                                        18  OLD-     18   AA
RSI                     PROP        = 0.9,0.9                                                       19  OLD-     19   AA
RSI                     P1          = 1.0, 1.0, 1.0                                                 20  OLD-     20   AA
RSI                     P2          = 1.0, 1.0, 0.0                                                 21  OLD-     21   AA
RSI                     P3          = 0.0, 1.0, 0.0                                                 22  OLD-     22   AA
RSI                     COM         = ' INNER RIGHT SIDE '                                          23  OLD-     23   AA
RSI             S       SURFN       = 3                                                             24  OLD-     24   AA
RSI                     TYPE        = RECT                                                          25  OLD-     25   AA
RSI                     ACTIVE      = TOP                                                           26  OLD-     26   AA
RSI                     PROP        = 0.9,0.9                                                       27  OLD-     27   AA
RSI                     P1          = 0.0, 0.0, 1.0                                                 28  OLD-     28   AA
RSI                     P2          = 0.0, 0.0, 0.0                                                 29  OLD-     29   AA
RSI                     P3          = 0.0, 1.0, 0.0                                                 30  OLD-     30   AA
RSI                     COM         = ' INNER RIGHT BACK '                                          31  OLD-     31   AA
RSI             S       SURFN       = 4                                                             32  OLD-     32   AA
RSI                     TYPE        = RECT                                                          33  OLD-     33   AA
RSI                     ACTIVE      = TOP                                                           34  OLD-     34   AA
RSI                     PROP        = 0.9,0.9                                                       35  OLD-     35   AA
RSI                     P1          = 1.0, 1.0, 0.0                                                 36  OLD-     36   AA
RSI                     COM         = ' INNER RIGHT BOTTOM '                                        37  OLD-     37   AA
RSI             BCS     BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000                                    38  OLD-     38   AA
RSI             C                                                                                   39  OLD-     39   AA
RSI             C------THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000                   40  OLD-     40   AA
RSI             C------TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX HAS INPUT IN                   41  OLD-     41   AA
RSI             C------THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW                   42  OLD-     42   AA
RSI             C------THE USE OF 'MESS' AND 'ERN' NODES.                                            43  OLD-     43   AA
RSI             C                                                                                   44  OLD-     44   AA
```

IMAGING SURFACE (1) BCS (BOXINR), GENERATING SURFACE (11) BCS (BOXINL)
IMAGING SURFACE (2) BCS (BOXINR), GENERATING SURFACE (12) BCS (BOXINL)
IMAGING SURFACE (3) BCS (BOXINR), GENERATING SURFACE (13) BCS (BOXINL)

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
SURFACE DATA INPUT BLOCK

```
CARD ORGIN       12345670 1 2345670 2 2345670 3 2345670 4 2345670 5 2345670 6 2345670 7 2345670 8 EDIT NO. OLD EDIT NO.  LABEL

                 IMAGING SURFACE (    4) BCS (BOXINR), GENERATING SURFACE (   14) BCS (BOXINL)
RSI              R      REFNO      = 1000                                                          45  OLD-      45   AA
RSI                     P1         = 1.0, 0.0, 1.0                                                 46  OLD-      46   AA
RSI                     P2         = 1.0, 0.0, 0.0                                                 47  OLD-      47   AA
RSI                     P3         = 0.0, 0.0, 0.0                                                 48  OLD-      48   AA
RSI                     COM        = ' IMAGING PLANE '                                             49  OLD-      49   AA
RSI              BCS    LIDINR                                                                     50  OLD-      50   AA
RSI              S      SURFN      = 5                                                             51  OLD-      51   AA
RSI                     TYPE       = RECT                                                          52  OLD-      52   AA
RSI                     ACTIVE     = BOTTOM                                                        53  OLD-      53   AA
RSI                     PROP       = 0.9,0.9                                                       54  OLD-      54   AA
RSI                     P1         = 1.0, 1.0, 0.0                                                 55  OLD-      55   AA
RSI                     COM        = ' INNER RIGHT LID '                                           56  OLD-      56   AA
RSI              S      SURFN      = 15                                                            57  OLD-      57   AA
RSI                     IMAGSF     = 5                                                             58  OLD-      58   AA
RSI                     IREFSF     = 1000                                                          59  OLD-      59   AA
RSI                     COM        = ' INNER LEFT LID '                                            60  OLD-      60   AA
RSI              BCS    BOXOUT                                                                     61  OLD-      61   AA
RSI              S      SURFN      = 21                                                            62  OLD-      62   AA
RSI                     TYPE       = BOX5                                                          63  OLD-      63   AA
RSI                     ACTIVE     = OUT                                                           64  OLD-      64   AA
RSI                     SHADE      = NO                                                            65  OLD-      65   AA
RSI                     PROP       = 0.2,0.9                                                       66  OLD-      66   AA
RSI                     P1         = 1.01,-1.01, 1.01                                              67  OLD-      67   AA
RSI                     P2         = 1.01, 1.01, 1.01                                              68  OLD-      68   AA
RSI                     P3         =-0.01, 1.01, 1.01                                              69  OLD-      69   AA
RSI                     P4         =-0.01, 1.01,-0.01                                              70  OLD-      70   AA
RSI                     COM        = ' OUTER SURFACES '                                            71  OLD-      71   AA
RSI              BCS    LIDOUT                                                                     72  OLD-      72   AA
RSI              S      SURFN      = 26                                                            73  OLD-      73   AA
RSI                     TYPE       = RECT                                                          74  OLD-      74   AA
RSI                     ACTIVE     = TOP                                                           75  OLD-      75   AA
RSI                     SHADE      = NO                                                            76  OLD-      76   AA
RSI                     PROP       = 0.2,0.9                                                       77  OLD-      77   AA
RSI                     P1         = 1.01,-1.01, 0.01                                              78  OLD-      78   AA
RSI                     P2         = 1.01, 1.01, 0.01                                              79  OLD-      79   AA
RSI                     P3         =-0.01, 1.01, 0.01                                              80  OLD-      80   AA
RSI                     COM        = ' OUTER SURFACE OF LID '                                      81  OLD-      81   AA
RSI              C                                                                                 82  OLD-      82   AA
RSI              C-----THE NEXT TWO BCS'S (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE                 83  OLD-      83   AA
RSI              C-----CASE 4 ONLY.                                                                84  OLD-      84   AA
RSI              C                                                                                 85  OLD-      85   AA
RSI              BCS    MESSR                                                                      86  OLD-      86   AA
RSI              S      SURFN      = 101                                                           87  OLD-      87   AA
RSI                     TYPE       = RECT                                                          88  OLD-      88   AA
RSI                     ACTIVE     = TOP                                                           89  OLD-      89   AA
RSI                     PROP       = 1.0,1.0                                                       90  OLD-      90   AA
```

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
SURFACE DATA INPUT BLOCK

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
RSI                      P1          = 1.0, 0.0, 1.0                                                  91  OLD-      91    AA
RSI                      P2          = 1.0, 0.0, 0.0                                                  92  OLD-      92    AA
RSI                      P3          = 0.0, 0.0, 0.0                                                  93  OLD-      93    AA
RSI                      COM         = * PRIMARY MESS NODE, RIGHT SIDE *                              94  OLD-      94    AA
RSI               BCS    MESSL                                                                        95  OLD-      95    AA
RSI               S      SURFN       = 111                                                            96  OLD-      96    AA
RSI                      TYPE        = RECT                                                           97  OLD-      97    AA
RSI                      ACTIVE      = BOTTOM                                                         98  OLD-      98    AA
RSI                      PROP        = 1.0,1.0                                                        99  OLD-      99    AA
RSI                      P1          = 1.0, 0.0, 1.0                                                 100  OLD-     100    AA
RSI                      P2          = 1.0, 0.0, 0.0                                                 101  OLD-     101    AA
RSI                      P3          = 0.0, 0.0, 0.0                                                 102  OLD-     102    AA
RSI                      COM         = * PRIMARY MESS NODE, LEFT SIDE *                              103  OLD-     103    AA
RSI               C                                                                                   104  OLD-     104    AA
RSI               C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.                 105  OLD-     105    AA
RSI               C                                                                                   106  OLD-     106    AA
RSI               BCS    LIDSP                                                                        107  OLD-     107    AA
RSI               S      SURFN       = 200                                                           108  OLD-     108    AA
RSI                      TYPE        = RECT                                                          109  OLD-     109    AA
RSI                      ACTIVE      = BOTTOM                                                        110  OLD-     110    AA
RSI                      PROP        = 0.1,0.1                                                       111  OLD-     111    AA
RSI                      SPRI        = 0.0                                                           112  OLD-     112    AA
RSI                      SPRS        = 0.0                                                           113  OLD-     113    AA
RSI                      P1          = 1.0,-1.0, 0.0                                                 114  OLD-     114    AA
RSI                      P2          = 1.0, 1.0, 0.0                                                 115  OLD-     115    AA
RSI                      P3          = 0.0, 1.0, 0.0                                                 116  OLD-     116    AA
RSI                      COM         = * SPECULAR LID *                                              117  OLD-     117    AA
```

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORDGEN
BCS DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL

RSI             HEADER BCS DATA                                                                  118  OLD-     118   AA
RSI             BCS    BOXINR                                                                    119  OLD-     119   AA
RSI             BCS    BOXINL                                                                    120  OLD-     120   AA
RSI             BCS    LIDINR .0..0..1..0..-45..0.                                               121  OLD-     121   AA
RSI             BCS    BOXOUT                                                                    122  OLD-     122   AA
RSI             BCS    LIDOUT .0..0..1..0..-45..0.                                               123  OLD-     123   AA
RSI             BCS    MESSR                                                                     124  OLD-     124   AA
RSI             BCS    MESSL                                                                     125  OLD-     125   AA
RSI             BCS    LIDSP  .0..0..1..0..-45..0.                                               126  OLD-     126   AA
```

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
CORRESPONDENCE DATA INPUT BLOCK

```
CARD ORIGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI              HEADER CORRESPONDENCE DATA                                                      127  OLD-     127    AA
RSI              C                                                                               128  OLD-     128    AA
RSI              C-----ENTER CORRESPONDENCE DATA FOR CASE 2                                      129  OLD-     129    AA
RSI              C                                                                               130  OLD-     130    AA
RSI              FIG    CASE2                                                                    131  OLD-     131    AA
RSI                     1          = 1,11,22                                                    132  OLD-     132    AA
RSI                     2          = 2,25                                                       133  OLD-     133    AA
RSI                     3          = 3,13,24                                                    134  OLD-     134    AA
RSI                     4          = 4,14,21                                                    135  OLD-     135    AA
RSI                     5          = 5,15,26                                                    136  OLD-     136    AA
RSI                     12         = 12,23                                                      137  OLD-     137    AA
RSI              C                                                                               138  OLD-     138    AA
RSI              C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS              139  OLD-     139    AA
RSI              C                                                                               140  OLD-     140    AA
RSI              FIG    CASE3,FF                                                                 141  OLD-     141    AA
RSI                     1          = 1,11,22                                                    142  OLD-     142    AA
RSI                     2          = 2,25                                                       143  OLD-     143    AA
RSI                     3          = 3,13,24                                                    144  OLD-     144    AA
RSI                     4          = 4,14,21                                                    145  OLD-     145    AA
RSI                     5          = 5,15,26                                                    146  OLD-     146    AA
RSI                     12         = 12,23                                                      147  OLD-     147    AA
```

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
OPERATION DATA INPUT BLOCK (PASS 1)

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
RSI               HEADER OPERATIONS DATA                                                          140  OLD-      140   AA
```

***** OPERATIONS DATA BLOCK (PASS 1) COMPLETE *****

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
OPERATION DATA INPUT BLOCK (PASS 2)

```
CARD ORGIN       12345670 1 2345670 2 2345670 3 2345670 4 2345670 5 2345670 6 2345670 7 2345670 8 EDIT NO. OLD EDIT NO.  LABEL
RSI              C                                                                                  149  OLD-     149   AA
RSI              C-----BUILD THE CASE 1 CONFIGURATION FOR SFCAL/FFCAL/GBCAL RESTART                 150  OLD-     150   AB
RSI              C                                                                                  151  OLD-     151   AA
PROG             STEP      -1                                                                         0
RSI              BUILD  CASE1,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT                                   152  OLD-     152   AA
PROG                    CALL BUILDC (BOXINR,6HCASE1 )                                               0
PROG                    CALL ADD (BOXINL)                                                           0
PROG                    CALL ADD (LIDINR)                                                           0
PROG                    CALL ADD (BOXOUT)                                                           0
PROG-                   CALL ADD (LIDOUT)                                                           0
INPUT            C                                                                                  153                    AC
INPUT            C-----SKIP THE SHADOW FACTOR TABLES ON RSI.  THIS IS ACCOMPLISHED                   154                    AC
INPUT            C-----BY REPLACING THE ¤L      SFCAL¤ CARD WITH A ¤CALL RSTON¤ CARD                155                    AC
INPUT            C-----TO SET THE SKIP FLAG                                                         156                    AC
INPUT            C                                                                                  157                    AC
INPUT                   CALL RSTON                                                                  158                    AC
RSI              L      SFPRNT=YES                                                                  159  OLD-     157   AB
RSI              L      SFCAL                                                                       160  OLD-     158   AA
RSI              C                                                                                  161  OLD-     159   AA
RSI              C-----READ THE FORM FACTOR MATRIX FROM RSI                                         162  OLD-     160   AB
RSI              C                                                                                  163  OLD-     161   AA
RSI              L      FFCAL                                                                       164  OLD-     162   AA
INPUT            C                                                                                  165                    AC
INPUT            C-----COMBINE FORM FACTORS.                                                        166                    AC
INPUT            C                                                                                  167                    AC
INPUT                   CALL RSTOFF                                                                 168                    AC
INPUT                   CALL CMDATA(0,5HCASE3,2HFF,0.0)                                             169                    AC
INPUT            L      CMCAL                                                                       170                    AC
INPUT            C                                                                                  171                    AC
INPUT            C-----CALCULATE GRAY BODY MATRICES USING COMBINED FORM FACTORS.                    172                    AC
INPUT            C                                                                                  173                    AC
INPUT                   CALL GBDATA(BOTH,0,CM)                                                      174                    AC
RSI              L      GBCAL                                                                       175  OLD-     167   AA
RSI              C                                                                                  176  OLD-     168   AA
RSI              C-----CALCULATE AND PUNCH RADKS WITH COMBINED NODES                                177  OLD-     169   AB
RSI              C                                                                                  178  OLD-     170   AB
INPUT                   CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)                                      179                    AC
RSI              L      RKCAL                                                                       180  OLD-     172   AA
RSI              C                                                                                  181  OLD-     173   AB
RSI              C-----DEFINE ORBIT AND VEHICLE ORIENTATION (CIRCULAR - PLANET ORIENTED)            182  OLD-     174   AB
RSI              C                                                                                  183  OLD-     175   AB
RSI                        CALL ORBIT2(EAR,0,60.,0,0,0,100.*6080.,100.*6080.)                       184  OLD-     176   AB
RSI                        CALL ORIENT(4HPLAN,1,2,3,300.,270.,0.)                                   185  OLD-     177   AB
RSI              C                                                                                  186  OLD-     178   AB
PROG             C                                                                                   0
PROG             C********************  ORBIT GENERATION STARTS HERE  ********************         0
RSI              CORBGEN CIRP,0.,180.,2,AQ                                                          187  OLD-     179   AB
PROG             C                                                                                   0
PROG             STEP  10000                                                                         0
```

```
PROG              TRUEAN      =        .000                                  0
PROG              TRUANF      =     180.000                                  0
PROG              TRUANI      =        .000                                  0
PROG              IAI         = 0                                            0
PROG              IAS         = 0                                            0
PROG              PLTYPE      = 6HPLSAVE                                     0
PROG              CALL DICOMP(0,0,0)                                         0
PROG          L    DICAL                                                     0
PROG              NSPFF       = 10000                                        0
PROG              PLTYPE      = 6HPLREAD                                     0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                                 0
PROG          L   AQCAL                                                     0
PROG          STEP  10001                                                   0
PROG              TRUEAN      =       90.000                                 0
PROG              CALL DICOMP(0,0,10000)                                     0
PROG          L    DICAL                                                    0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                                 0
PROG          L   AQCAL                                                     0
PROG          STEP  10002                                                   0
PROG              TRUEAN      =      180.000                                 0
PROG              CALL DICOMP(0,0,10000)                                     0
PROG          L    DICAL                                                    0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                                 0
PROG          L   AQCAL                                                     0
PROG          STEP  10003                                                   0
PROG              IF(SHADIN.LT.0.)                 GO TO 90400              0
PROG              TRUEAN      = SHADIN-0.1                                   0
PROG              IF(TRUEAN.LT.TRUANI.OR.                                    0
PROG             1    TRUEAN.GT.TRUANF)           GO TO  90000              0
PROG              CALL DICOMP(0,4HZERO,10000)                                0
PROG          L    DICAL                                                    0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                                 0
PROG          L   AQCAL                                                     0
PROG          90000  CONTINUE                                               0
PROG          STEP  10004                                                   0
PROG              TRUEAN      = SHADIN+0.1                                   0
PROG              IF(TRUEAN.LT.TRUANI.OR.                                    0
PROG             1    TRUEAN.GT.TRUANF)           GO TO  90100              0
PROG              CALL DICOMP(0,0,10000)                                     0
PROG          L    DICAL                                                    0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                                 0
PROG          L   AQCAL                                                     0
PROG          90100  CONTINUE                                               0
PROG          STEP  10005                                                   0
PROG              TRUEAN      = SHAOUT+0.1                                   0
PROG              IF(TRUEAN.LT.TRUANI.OR.                                    0
PROG             1    TRUEAN.GT.TRUANF)           GO TO  90200              0
PROG              CALL DICOMP(0,4HZERO,10000)                                0
PROG          L    DICAL                                                    0
PROG              CALL AQDATA(IAI,IAS,0,0,0)                                 0
PROG          L   AQCAL                                                     0
PROG          90200  CONTINUE                                               0
PROG          STEP  10006                                                   0
PROG              TRUEAN      = SHAOUT-0.1                                   0
PROG              IF(TRUEAN.LT.TRUANI.OR.                                    0
PROG             1    TRUEAN.GT.TRUANF)           GO TO  90300              0
PROG              CALL DICOMP(0,0,10000)                                     0
```

```
PROG            L       ORCAL                                                   0
PROG                    CALL AODATA(IAI,IAS,0,0,0)                              0
PROG            L       AOCAL                                                   0
PROG            90300   CONTINUE                                                0
PROG            90400   CONTINUE                                                0
PROG                    CALL QODATA(3HALL,0,0,0,0,0,0,0 )                       0
PROG            L       QOCAL                                                   0
PROG            C                                                               0
PROG            C**********************  ORBIT GENERATION ENDS HERE  ***********0
PROG            C                                                               0
RSI             C                                                     180  OLD-     180   AB
RSI             C-----THE CONFIGURATION NAME IS REDEFINDED SO THE QO'S WILL USE  189  OLD-     181   AB
RSI             C-----THE DESIRED(CASE2) CORRESPONDENCE DATA.                    190  OLD-     182   AB
RSI             C                                                               191  OLD-     183   AB
RSI                     MODELN=5HCASE2                                          192  OLD-     184   AB
RSI                     CALL QODATA(3HALL,0,0,0,0,0,0,0)                        193  OLD-     185   AB
RSI             L       QOCAL                                                   194  OLD-     186   AB
RSI             END OF DATA                                                     195  OLD-     186   AA
```

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CRCAL/GSCAL/RCCAL/ORBGEN
PROCESSOR CORE ALLOCATION

THE FOLLOWING IS THE PROCESSOR CORE ALLOCATION FOR THOSE SEGMENTS WHICH WILL BE LOADED IN THIS EXECUTION (APPROX.) ...

	OCTAL/DECIMAL
TRASYS (0) SEGMENT	121213/ 41611
OPERATIONS DATA (NOT KNOWN AT THIS TIME)	175000/ 64000
INITALIZATION SEGMENT	122300/ 42176
FORM FACTOR SEGMENT	136100/ 48192
SHADOW FACTOR SEGMENT	136000/ 48128
DIRECT FLUX SEGMENT	150500/ 53568
GRAY BODY SEGMENT	124000/ 43008
ABSORBED Q-S SEGMENT	122500/ 42304
-QO- SEGMENT	130600/ 45440
RADATION CONDUCTOR SEGMENT	125500/ 43840
FORM FACTOR COMBINING SEGMENT	124500/ 43328
GRAY BODY DYNAMIC COMMON	000276/ 190
-QO- DYNAMIC COMMON	003554/ 1900
RADIATION CONDUCTOR DYNAMIC COMMON	000574/ 380
FORM FACTOR COMBINING DYNAMIC COMMON	000574/ 380
GRAY BODY MINIMUM - MAXIMUM CORE	123566/ 42870 - 123716/ 42950
-QO- MINIMUM - MAXIMUM CORE	125142/ 43618 - 130552/ 45418
RADIATION CONDUCTOR MINIMUM - MAXIMUM CORE	125221/ 43665 - 125465/ 43829
FORM FACTOR COMBINING MINIMUM - MAXIMUN CORE	124230/ 43160 - 124426/ 43286
MINIMUM CORE NEEDED FOR PROCESSOR EXECUTION	150500/ 53568
MAXIMUM CORE NEEDED FOR PROCESSOR EXECUTION	150500/ 53568
AMOUNT OF CORE THAT WILL BE USED BY PROCESSSOR	150500/ 53568

MODEL = SAMPLE SAMPLE CASE 3 - FFCAL/CRCAL/GOCAL/RCCAL/ORDGEN
WRAP UP OF THE PRE-PROCESSOR

PRE-PROCESSOR ACCOUNTING INFORMATION	CP-SEC	DYN-STORAGE
SOURCE EDITING	1.449	676
DOCUMENTATION DATA PRE-PROCESSING	.000	0
QUANTITIES DATA PRE-PROCESSING	.038	266
ARRAY DATA PRE-PROCESSING	.000	0
SURFACE DATA PRE-PROCESSING (PASS 1)	1.766	64
SURFACE DATA PRE-PROCESSING (PASS 2)	.660	1141
BCS DATA PRE-PROCESSING	.309	186
FORM FACTOR DATA PRE-PROCESSING	.000	0
SHADOW DATA PRE-PROCESSING	.000	0
FLUX DATA PRE-PROCESSING	.000	0
CORRESPONDENCE DATA PRE-PROCESSING	.269	101
OPERATIONS DATA PRE-PROCESSING	4.802	879
SUBROUTINE DATA PRE-PROCESSING	.368	0
SEQENTIAL TAPE INITIALIZATION	.022	0

TOTAL CP TIME FOR PRE-PROCESSOR ..... 10.392 DECIMAL SECONDS OR 000013 OCTAL SECONDS

MINIMUM DYNAMIC STORAGE NEEDED BY PRE-PROCESSOR .. 1141 DECIMAL WORDS

DYNAMIC STORAGE AVAILABLE TO PRE-PROCESSOR ..... 10000 DECIMAL WORDS

NORMAL TERMINATION BY PRE-PROCESSOR

```
@PND.@LEP

@ASG,T/S RSO.,@C,RSO,92,RSO APPENDIX H, CASE 3.

@TEST TNE/1/S3

@JUMP L3
INTERVENING STATEMENTS SKIPPED

@L3:FREE DATA1.

@FREE 14
```

NASA/MARTIN MARIETTA

THERMAL RADIATION ANALYSIS SYSTEM

UNIVAC 1110/EXEC 8

PROCESSOR EXECUTION

VERSION.MODIFICATION ... UL2E6
MODIFICATION DATE 061978

DATE OF RUN 062878
TIME OF RUN 210523
JOB NUMBER RVMH03

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
PROCESSING OPERATIONS DATA

SEQUENCE	NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS----------
1	1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
6	12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
7	13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
8	14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
9	5	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT LID
10	15	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER LEFT LID
11	21	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
12	22	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
13	23	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
14	24	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
15	25	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
16	26	LIDOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACE OF LID

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER = 1)

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

****

RESTARTING - SFCAL - DATA FOR CONFIGURATION- CASE1 -FROM UNIT - 14

****

CLOCK ANGLE

NODE 1	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	.81	.64	.33	.11	.00	.00	.17	.67	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	.58	.42	.19	.06	.00	.00	.00	.03	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.19	.25	.17	.08	.00	.00	.00	.17	.61	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 1	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	.81	.64	.33	.11	.00	.00	.17	.67	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	.58	.42	.19	.06	.00	.00	.00	.03	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.19	.25	.17	.08	.00	.00	.00	.17	.61	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112 5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 2	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.17	.33	.44	.56	.58	.61	22.5
	.42	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.42	.64	.61	.58	.42	45.0
	.19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.61	.42	.25	.22	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 2	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.17	.33	.44	.56	.58	.61	22.5
	.42	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.42	.64	.61	.58	.42	45.0
	.19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.61	.42	.25	.22	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CRCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 3	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.06	.08	.03	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.81	.53	.31	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.33	.83	1.00	1.00	45.0
	.33	.42	.31	.25	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.25	.72	.50	.50	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 3	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.06	.08	.03	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.81	.53	.31	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.33	.83	1.00	1.00	45.0
	.33	.42	.31	.25	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.25	.72	.50	.50	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 4 0. 20. 40. 60. 80. 100. 120. 140. 160. 180. 200. 220. 240. 260. 280. 300. 320. 340. 360.

SOLAR SHADOW TABLE

																			CONE ANGLE
.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
.67	.56	.36	.39	.39	.28	.11	.00	.00	.00	.00	.00	.00	.17	.33	.50	.50	.67	.67	22.5
.00	.00	.06	.08	.00	.00	.06	.00	.00	.00	.00	.00	.03	.28	.64	.50	.17	.00	.00	45.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 4 0. 20. 40. 60. 80. 100. 120. 140. 160. 180. 200. 220. 240. 260. 280. 300. 320. 340. 360.

INFRA RED SHADOW TABLE

																			CONE ANGLE
.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
.67	.56	.36	.39	.39	.28	.11	.00	.00	.00	.00	.00	.00	.17	.33	.50	.50	.67	.67	22.5
.00	.00	.06	.08	.00	.00	.06	.00	.00	.00	.00	.00	.03	.28	.64	.50	.17	.00	.00	45.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

SOLAR SHADOW TABLE

NODE 11 CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
.00	.00	.00	.00	.00	1.00	.67	.17	.00	.00	.11	.33	.64	.81	.00	.00	.00	.00	.00	22.5
.00	.00	.00	.00	.00	1.00	.03	.00	.00	.00	.06	.19	.42	.58	.00	.00	.00	.00	.00	45.0
.00	.00	.00	.00	.00	.61	.17	.00	.00	.00	.08	.17	.25	.19	.00	.00	.00	.00	.00	67.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

INFRA RED SHADOW TABLE

NODE 11 CLOCK ANGLE 0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	CONE ANGLE
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
.00	.00	.00	.00	.00	1.00	.67	.17	.00	.00	.11	.33	.64	.81	.00	.00	.00	.00	.00	22.5
.00	.00	.00	.00	.00	1.00	.03	.00	.00	.00	.06	.19	.42	.58	.00	.00	.00	.00	.00	45.0
.00	.00	.00	.00	.00	.61	.17	.00	.00	.00	.08	.17	.25	.19	.00	.00	.00	.00	.00	67.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GDCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

	CLOCK ANGLE																		
NODE 12	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.
SOLAR SHADOW TABLE																			CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.50	.56	.44	.33	.17	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.61	22.5
	.42	.58	.61	.64	.42	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42	45.0
	.19	.22	.25	.42	.61	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

	CLOCK ANGLE																		
NODE 12	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.
INFRA RED SHADOW TABLE																			CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.61	.50	.56	.44	.33	.17	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.61	22.5
	.42	.58	.61	.64	.42	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42	45.0
	.19	.22	.25	.42	.61	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 13	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.03	.08	.06	.00	22.5
	1.00	1.00	.83	.33	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.31	.53	.81	1.00	45.0
	.33	.50	.50	.72	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.25	.31	.42	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 13	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.03	.08	.06	.00	22.5
	1.00	1.00	.83	.33	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.31	.53	.81	1.00	45.0
	.33	.50	.50	.72	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.25	.31	.42	.33	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CHCAL/GOCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 14	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.67	.67	.50	.50	.33	.17	.00	.00	.00	.00	.00	.00	.11	.20	.39	.39	.36	.56	.67	22.5
	.00	.00	.17	.50	.64	.28	.03	.00	.00	.00	.00	.00	.06	.00	.00	.08	.06	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 14	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.0
	.67	.67	.50	.50	.33	.17	.00	.00	.00	.00	.00	.00	.11	.20	.39	.39	.36	.56	.67	22.5
	.00	.00	.17	.50	.64	.28	.03	.00	.00	.00	.00	.00	.06	.00	.00	.08	.06	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 5	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.56	.67	.67	.72	.72	.00	.00	.00	.00	.00	.00	.00	.14	.14	.33	.50	.50	.67	112.5
	.33	.39	.33	.31	.33	.33	.31	.22	.11	.00	.00	.00	.00	.00	.00	.00	.17	.33	.33	135.0
	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 5	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.56	.67	.67	.72	.72	.00	.00	.00	.00	.00	.00	.00	.14	.14	.33	.50	.50	.67	112.5
	.33	.39	.33	.31	.33	.33	.31	.22	.11	.00	.00	.00	.00	.00	.00	.00	.17	.33	.33	135.0
	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 15	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.50	.50	.33	.14	.14	.00	.00	.00	.00	.00	.00	.00	.72	.72	.67	.67	.56	.67	112.5
	.33	.33	.17	.00	.00	.00	.00	.00	.00	.00	.11	.22	.31	.33	.33	.31	.33	.39	.33	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 15	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	.67	.50	.50	.33	.14	.14	.00	.00	.00	.00	.00	.00	.00	.72	.72	.67	.67	.56	.67	112.5
	.33	.33	.17	.00	.00	.00	.00	.00	.00	.00	.11	.22	.31	.33	.33	.31	.33	.39	.33	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.08	.11	.14	.14	.11	.08	.03	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 21	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 21	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 22	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 22	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 23	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 23	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	67.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	90.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	112.5
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	135.0
	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/GMCAL/GSCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 24	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	CONE ANGLE
SOLAR SHADOW TABLE																				
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 24	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	CONE ANGLE
INFRA RED SHADOW TABLE																				
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	22.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	45.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 25	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

CLOCK ANGLE

NODE 25	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	45.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	67.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	90.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	112.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	135.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	157.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	180.0

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
SHADOW FACTOR GENERATOR LINK

CLOCK ANGLE

NODE 26	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
SOLAR SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

CLOCK ANGLE

NODE 26	0.	20.	40.	60.	80.	100.	120.	140.	160.	180.	200.	220.	240.	260.	280.	300.	320.	340.	360.	
INFRA RED SHADOW TABLE																				CONE ANGLE
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.0
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.5
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45.0
	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	67.5
	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	90.0
	.00	.00	.00	.00	.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	.00	.00	.00	.00	.00	112.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	135.0
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	157.5
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	180.0

* * * *

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	.1-05	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
*FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	NO	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

* -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

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.RESTARTING - FFCAL - DATA FOR CONFIGURATION- CASE1 -FROM UNIT - 14

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MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

SEQUENCE	NODE	AREA	ALPH	EMISS
1	1	1.00000	.900	.900
2	2	1.00000	.900	.900
3	3	1.00000	.900	.900
4	4	1.00000	.900	.900
5	11	1.00000	.900	.900
6	12	1.00000	.900	.900
7	13	1.00000	.900	.900
8	14	1.00000	.900	.900
9	5	1.00000	.900	.900
10	15	1.00000	.900	.900
11	21	2.06040	.200	.900
12	22	2.06040	.200	.900
13	23	1.04040	.200	.900
14	24	2.06040	.200	.900
15	25	1.04040	.200	.900
16	26	2.06040	.200	.900

NUMBER OF NODES = 16 NUMBER OF SURFACES = 16
(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
1	2	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
1	3	RSI	.201522	.201522	.201522	.201522	.201522	1.000000	1.000000	.000	0	0	UN
1	4	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
1	12	RSI	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.000	0	0	UN
1	13	RSI	.086058	.086058	.086058	.086058	.086058	1.000000	1.000000	.000	0	0	UN
1	14	RSI	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	.000	0	0	UN
1	5	RSI	.137203	.137203	.137203	.137203	.137203	1.000000	1.000000	.000	0	0	UN
1	15	RSI	.056006	.056006	.056006	.056006	.056006	1.000000	1.000000	.000	0	0	UN
1	FFSUM = .9690		ROW CP TIME = .137										
	FORM FACTOR RESTART (RSO) RECORD = 56												
2	3	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
2	4	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
2	11	RSI	.032922	.032922	.032922	.032922	.032922	.000000	.000000	.000	0	0	UN
2	12	RSI	.068832	.068832	.068832	.068832	.068832	1.000000	1.000000	.000	0	0	UN
2	13	RSI	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.000	0	0	UN
2	14	RSI	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.000	0	0	UN
2	5	RSI	.096343	.096343	.096343	.096343	.096343	1.000000	1.000000	.000	0	0	UN
2	15	RSI	.034262	.034262	.034262	.034262	.034262	1.000000	1.000000	.000	0	0	UN
2	FFSUM = .9203	ROW CP TIME = .157											
	FORM FACTOR RESTART (RSO) RECORD = 57												
3	4	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
3	11	RSI	.086058	.086058	.086058	.086058	.086058	.000000	.000000	.000	0	0	UN
3	12	RSI	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.000	0	0	UN
3	14	RSI	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	.000	0	0	UN
3	5	RSI	.050426	.050426	.050426	.050426	.050426	1.000000	1.000000	.000	0	0	UN
3	15	RSI	.011660	.011660	.011660	.011660	.011660	1.000000	1.000000	.000	0	0	UN
3	FFSUM = .8378	ROW CP TIME = .080											
	FORM FACTOR RESTART (RSO) RECORD = 58												
4	11	RSI	.040501	.040501	.040501	.040501	.040501	.000000	.000000	.000	0	0	UN
4	12	RSI	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.000	0	0	UN
4	13	RSI	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	.000	0	0	UN
4	5	RSI	.107798	.107798	.107798	.107798	.107798	1.000000	1.000000	.000	0	0	UN
4	15	RSI	.056851	.056851	.056851	.056851	.056851	1.000000	1.000000	.000	0	0	UN
4	FFSUM = .9007	ROW CP TIME = .066											
	FORM FACTOR RESTART (RSO) RECORD = 59												
11	12	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
11	13	RSI	.201522	.201522	.201522	.201522	.201522	1.000000	1.000000	.000	0	0	UN

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
11	14	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
11	6	RSI	.056006	.056006	.056006	.056006	.056006	1.000000	1.000000	.000	0	0	UN
11	15	RSI	.137203	.137203	.137203	.137203	.137203	1.000000	1.000000	.000	0	0	UN
11	FFSUM = .9690		ROW CP TIME = .119										
	FORM FACTOR RESTART (RSO) RECORD = 60												
12	13	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
12	14	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
12	5	RSI	.034262	.034262	.034262	.034262	.034262	1.000000	1.000000	.000	0	0	UN
12	15	RSI	.096343	.096343	.096343	.096343	.096343	1.000000	1.000000	.000	0	0	UN
12	FFSUM = .9203		ROW CP TIME = .052										
	FORM FACTOR RESTART (RSO) RECORD = 61												
13	14	RSI	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	.000	0	0	UN
13	5	RSI	.011660	.011660	.011660	.011660	.011660	1.000000	1.000000	.000	0	0	UN
13	15	RSI	.050426	.050426	.050426	.050426	.050426	1.000000	1.000000	.000	0	0	UN
13	FFSUM = .8378		ROW CP TIME = .047										
	FORM FACTOR RESTART (RSO) RECORD = 62												
14	5	RSI	.056851	.056851	.056851	.056851	.056851	1.000000	1.000000	.000	0	0	UN
14	15	RSI	.107798	.107798	.107798	.107798	.107798	1.000000	1.000000	.000	0	0	UN
14	FFSUM = .9007		ROW CP TIME = .029										
	FORM FACTOR RESTART (RSO) RECORD = 63												

NODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RS1, RT1, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
5	FFSUM = .5505	ROW CP TIME = .066										
	FORM FACTOR RESTART (RS0) RECORD = 64											
15	FFSUM = .5505	ROW CP TIME = .004										
	FORM FACTOR RESTART (RS0) RECORD = 65											
21	FFSUM = .0000	ROW CP TIME = .006										
	FORM FACTOR RESTART (RS0) RECORD = 66											
22	FFSUM = .0000	ROW CP TIME = .005										
	FORM FACTOR RESTART (RS0) RECORD = 67											
23	FFSUM = .0000	ROW CP TIME = .006										
	FORM FACTOR RESTART (RS0) RECORD = 68											
24	FFSUM = .0000	ROW CP TIME = .002										
	FORM FACTOR RESTART (RS0) RECORD = 69											

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORDGEN
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) H/SHAD	FIR(J,I) H/SHAD	FSOL(I,J) H/SHAD	FSOL(J,I) H/SHAD	FF(I,J) HO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ

25 FFSUM = .0000 ROW CP TIME = .060
FORM FACTOR RESTART (RSO) RECORD = 70

26 FFSUM = .0000 ROW CP TIME = .002
FORM FACTOR RESTART (RSO) RECORD = 71

* *

FF FORM FACTORS FOR CONFIGURATION CASE1 HAVE BEEN STORED ON RSO.
LAST RESTART RECORD WRITTEN = 71

* *

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM
1- .9690	2- .9203	3- .8378	4- .9007	11- .9690	12- .9203
13- .8378	14- .9007	5- .5505	15- .5505	21- .0000	22- .0000
23- .0000	24- .0000	25- .0000	26- .0000		

TOTAL TIME FOR FORM FACTOR SEGMENT 1.517

TOTAL TIME SINCE START OF RUN 77.437

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR COMBINING LINK.

NODE	AREA	ALPH	EMISS	TRANS(UV)	TRANS(IR)	SPECULAR REFL(UV)	SPECULAR REFL(IR)
1	4.06040	.545+00	.900+00	.000	.000	.000	.000
2	2.04040	.543+00	.900+00	.000	.000	.000	.000
3	4.06040	.545+00	.900+00	.000	.000	.000	.000
4	4.06040	.545+00	.900+00	.000	.000	.000	.000
12	2.04040	.543+00	.900+00	.000	.000	.000	.000
5	4.06040	.545+00	.900+00	.000	.000	.000	.000

NUMBER OF NODES AFTER COMBINING = 6

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR COMBINING LINK.

NODE I	NODE J	COMPUTATION	FE(I,J) H/SHAD	FE(J,I) H/SHAD	FA(I,J) H/SHAD
1	2	COMB	.059182	.117772	.059182
1	3	COMB	.141651	.141651	.141651
1	4	COMB	.122096	.122096	.122096
1	12	COMB	.059182	.117772	.059182
1	5	COMB	.095167	.095167	.095167
1	FF SUM =	.4773			
2	3	COMB	.117772	.059182	.117772
2	4	COMB	.117772	.059182	.117772
2	12	COMB	.033734	.033734	.033734
2	5	COMB	.064010	.032166	.064010
2	FF SUM =	.4511			
3	4	COMB	.122096	.122096	.122096
3	12	COMB	.059182	.117772	.059182
3	5	COMB	.030581	.030581	.030581
3	FF SUM =	.4127			
4	12	COMB	.059182	.117772	.059182
4	5	COMB	.081100	.081100	.081100
4	FF SUM =	.4437			
12	5	COMB	.064010	.032166	.064010
12	FF SUM =	.4511			
5	FF SUM =	.2712			

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
FORM FACTOR COMBINING LINK.

COMBINED FORM FACTOR SUMS FROM NODE 1

NODE 1 -	FFSUM	NODE 1 -	FFSUM	NODE 1 -	FFSUM	NODE 1 -	FFSUM	NODE 1 -	FFSUM	NODE 1 -	FFSUM
1-	.4772783	2-	.4510588	3-	.4126925	4-	.4436561	12-	.4510589	5-	.2711795

COMBINED NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY THE FORM FACTOR COMBINING LINK. (ACCESS NUMBER = 2)

CM FORM FACTORS FOR CONFIGURATION CASE1 HAVE BEEN STORED ON RSO.
LAST RESTART RECORD WRITTEN = 91

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBNBND	BOTH	BOTH	NAVEBAND DEFINITION PARAMETER	(2HIR,3HSOL,4HBOTH)

IR GRAY BODIES FOR CONFIGURATION CASE1 HAVE BEEN COMPUTED AND STORED ON RSO.
LAST RESTART RECORD WRITTEN = 99

SOL GRAY BODIES FOR CONFIGURATION CASE1 HAVE BEEN COMPUTED AND STORED ON RSO.
LAST RESTART RECORD WRITTEN = 107

TOTAL TIME TO COMPUTE GRAY BODIES .49

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
@ADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	SPACE	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	999	32767	SPACE NODE ID NUMBER	N/A
SIGMA	.17-08	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	.7+00	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	.990	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	0	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
RADIATION CONDUCTOR GENERATION LINK.

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY SECONDARY

NONE

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADKS) CARDS

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

```
PUNCHED AND/OR BCDOU RADKS -        -    1.    1.    2.   .34560-09$
PUNCHED AND/OR BCDOU RADKS -        -    2.    1.    3.   .81703-09$
PUNCHED AND/OR BCDOU RADKS -        -    3.    1.    4.   .71086-09$
PUNCHED AND/OR BCDOU RADKS -        -    4.    1.   12.   .34560-09$
PUNCHED AND/OR BCDOU RADKS -        -    5.    1.    5.   .54917-09$
PUNCHED AND/OR BCDOU RADKS -        -    6.    2.    3.   .34439-09$
PUNCHED AND/OR BCDOU RADKS -        -    7.    2.    4.   .34467-09$
PUNCHED AND/OR BCDOU RADKS -        -    8.    2.   12.   .10226-09$
PUNCHED AND/OR BCDOU RADKS -        -    9.    2.    5.   .18906-09$
PUNCHED AND/OR BCDOU RADKS -        -   10.    3.    4.   .70787-09$
PUNCHED AND/OR BCDOU RADKS -        -   11.    3.   12.   .34439-09$
PUNCHED AND/OR BCDOU RADKS -        -   12.    3.    5.   .19031-09$
PUNCHED AND/OR BCDOU RADKS -        -   13.    4.   12.   .34467-09$
PUNCHED AND/OR BCDOU RADKS -        -   14.    4.    5.   .47049-09$
PUNCHED AND/OR BCDOU RADKS -        -   15.   12.    5.   .18906-09$
PUNCHED AND/OR BCDOU RADKS -        -   16.    1.  999.   .34580-08$
PUNCHED AND/OR BCDOU RADKS -        -   17.    2.  999.   .18126-08$
PUNCHED AND/OR BCDOU RADKS -        -   18.    3.  999.   .38270-08$
PUNCHED AND/OR BCDOU RADKS -        -   19.    4.  999.   .36521-08$
PUNCHED AND/OR BCDOU RADKS -        -   20.   12.  999.   .18126-08$
PUNCHED AND/OR BCDOU RADKS -        -   21.    5.  999.   .46598-08$
```

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CNCAL/GSCAL/RCCAL/ORDGEN
RADIATION CONDUCTOR GENERATION LINK.

CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE BEFORE RKMIN SCREENING

1 - .10000+01	2 - .10000+01	3 - .10000+01	4 - .10000+01	12 - .10000+01	5 - .10000+01

MODEL=SAMPLE CONFIG=CASE1 STEP=-1 SAMPLE CASE 3 - FFCAL/CRCAL/GBCAL/RCCAL/ORBGEN
RADIATION CONDUCTOR GENERATION LINK.

CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE AFTER RKMIN SCREENING

1 - .10000+01	2 - .10000+01	3 - .10000+01	4 - .10000+01	12 - .10000+01	5 - .10000+01

TOTAL TIME TO COMPUTE AND CONDENSE RADKS = .51

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
0	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.300+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.300+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

♦♦♦♦♦♦♦♦ NSTEP NO = 10000

♦♦♦♦ COMPUTED OR INPUT ORBIT DATA ♦♦♦♦

VALUE	VARIABLE DESCRIPTION	♦♦♦	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

♦♦♦♦ PLANET --EARTH -- DATA ♦♦♦♦

VALUE	DESCRIPTION	NAME	♦♦♦	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 3 - FFCAL/CNCAL/GOCAL/RCCAL/ORDGEN
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10000TRUE ANOMALY = .00000 TIME = .00000
**** IN THE SUN ****

NODE NUMBER	DIRECT FLUX(BDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	SFTAPE	.091	9	0
2	.94029+02	.18576+03	.5062	CALC	.183	81	5
3	.00000	.10725+03	.0000	CALC	.294	64	0
4	.18576+03	.37152+03	.5000	SFTAPE	.352	81	0
11	.00000	.00000	.0000	SFTAPE	.394	9	0
12	.00000	.00000	.0000	SFTAPE	.447	9	0
13	.10055+02	.10725+03	.0938	CALC	.566	64	6
14	.10684+03	.37152+03	.2870	SFTAPE	.620	81	0
5	.00000	.00000	.0000	SFTAPE	.677	9	0
15	.00000	.00000	.0000	SFTAPE	.725	9	0
21	.00000	.00000	.0000	SFTAPE	.774	8	0
22	.10725+03	.10725+03	1.0000	CALC	.948	66	10
23	.18576+03	.18576+03	1.0000	CALC	1.114	81	6
24	.00000	.00000	.0000	SFTAPE	1.160	8	0
25	.00000	.00000	.0000	SFTAPE	1.207	9	0
26	.18687+03	.18687+03	1.0000	CALC	1.411	78	10

NOTE--

FLUX VALUES FLAGGED (****+***) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DI(

TOTAL ELAPSED TIME IN PROBLEM = 81.593 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10000 TRUE ANOMALY = .00000 TIME = .00000
**** IN THE SUN ****

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	SFTAPE	.000	.000	.391+02	.268+02	.000	.000	.000	66	9	9
2	SFTAPE	.000	.000	.400+02	.264+02	.000	.000	.289	66	9	9
3	SFTAPE	.000	.000	.402+02	.268+02	.000	.000	.523	61	9	9
4	SFTAPE	.000	.000	.000	.000	.000	.000	.623	52	9	9
11	SFTAPE	.000	.000	.391+02	.268+02	.000	.000	.848	66	9	9
12	SFTAPE	.000	.000	.382+02	.264+02	.000	.000	1.082	66	9	9
13	SFTAPE	.000	.000	.402+02	.268+02	.000	.000	1.313	61	9	9
14	SFTAPE	.000	.000	.000	.000	.000	.000	1.413	52	9	9
5	CALC	.231+02	.155+02	.834+02	.559+02	.277	.277	2.508	133	16	9
15	CALC	.233+02	.154+02	.834+02	.559+02	.279	.277	3.490	133	16	9
21	CALC	.110+03	.742+02	.110+03	.742+02	1.000	1.000	7.728	112	18	10
22	CALC	.402+02	.268+02	.402+02	.268+02	1.000	1.000	8.618	61	10	10
23	CALC	.400+02	.264+02	.400+02	.264+02	1.000	1.000	9.343	66	9	10
24	CALC	.391+02	.268+02	.391+02	.268+02	1.000	1.000	10.266	66	10	10
25	CALC	.382+02	.264+02	.382+02	.264+02	1.000	1.000	10.856	66	9	10
26	CALC	.659+01	.457+01	.659+01	.457+01	1.000	1.000	11.137	52	2	10

NOTE--

FLUX VALUES FLAGGED (+++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DIC

TOTAL ELAPSED TIME IN PROBLEM = 92.987 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 120

MODEL=SAMPLE CONFIG=CASE1 STEP=10000 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10000	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10000

TOTAL TIME TO COMPUTE ABSORBED Q .14

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
90.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.000	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.900+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10001

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10001 TRUE ANOMALY = 90.00000 TIME = .36701
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX(BDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	SFTAPE	.001	9	0
2	.00000	.00000	.0000	SFTAPE	.065	9	0
3	.00000	.42900+03	.0000	SFTAPE	.104	81	0
4	.00000	.00000	.0000	SFTAPE	.139	9	0
11	.00000	.00000	.0000	SFTAPE	.172	9	0
12	.00000	.00000	.0000	SFTAPE	.206	9	0
13	.00000	.42900+03	.0000	SFTAPE	.250	81	0
14	.00000	.00000	.0000	SFTAPE	.285	9	0
5	.30335+03	.30335+03	1.0000	SFTAPE	.329	81	0
15	.30335+03	.30335+03	1.0000	SFTAPE	.375	81	0
21	.00000	.00000	.0000	SFTAPE	.409	8	0
22	.42900+03	.42900+03	1.0000	SFTAPE	.457	78	0
23	.00000	.00000	.0000	SFTAPE	.492	9	0
24	.00000	.00000	.0000	SFTAPE	.526	8	0
25	.00000	.00000	.0000	SFTAPE	.581	9	0
26	.00000	.00000	.0000	SFTAPE	.596	8	0

NOTE--

FLUX VALUES FLAGGED (+++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DIC

TOTAL ELAPSED TIME IN PROBLEM = 94.280 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10001 TRUE ANOMALY = 90.00000 TIME = .36701
**** IN THE SUN ****

NODE NUMBER	CONPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	SFTAPE	.000	.000	.000	.000	.000	.000	.001	66	9	9
2	SFTAPE	.000	.000	.638+00	.000	.000	.000	.235	66	9	9
3	SFTAPE	.000	.000	.206+01	.000	.000	.000	.432	61	9	9
4	SFTAPE	.000	.000	.000	.000	.000	.000	.520	52	9	9
11	SFTAPE	.000	.000	.000	.000	.000	.000	.714	66	9	9
12	SFTAPE	.000	.000	.634+00	.000	.000	.000	.913	66	9	9
13	SFTAPE	.000	.000	.206+01	.000	.000	.000	1.101	61	9	9
14	SFTAPE	.000	.000	.000	.000	.000	.000	1.187	52	9	9
5	CALC	.126+01	.155+02	.247+01	.000	.509	.000	2.034	133	16	9
15	CALC	.125+01	.154+02	.247+01	.000	.504	.000	2.802	133	16	9
21	CALC	.143+01	.742+02	.143+01	.000	1.000	.000	6.112	112	18	10
22	CALC	.206+01	.268+02	.206+01	.000	1.000	.000	6.818	61	10	10
23	CALC	.638+00	.264+02	.638+00	.000	1.000	.000	7.378	66	9	10
24	CALC	.000	.268+02	.000	.000	.000	.000	8.110	66	10	10
25	CALC	.634+00	.264+02	.634+00	.000	1.000	.000	8.670	66	9	10
26	CALC	.000	.457+01	.000	.000	.000	.000	8.938	52	2	10

NOTE--

FLUX VALUES FLAGGED (+++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICO

TOTAL ELAPSED TIME IN PROBLEM = 103.420 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 139

MODEL=SAMPLE CONFIG=CASE1 STEP=10001 SAMPLE CASE 3 - FFCAL/CMCAL/GDCAL/RCCAL/ORBGEN
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10001	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10001

TOTAL TIME TO COMPUTE ABSORBED Q .15

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 3 - FFCAL/CRCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
180.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60900+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.300+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.150+03	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10002

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 3 - FFCAL/CNCAL/GOCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10002TRUE ANOMALY = 180.00000 TIME = .73402
**** IN THE SHADE ****

NODE NUMBER	DIRECT FLUX(BDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	******	.001	0	0
2	.00000	.00000	.0000	******	.053	0	0
3	.00000	.00000	.0000	******	.082	0	0
4	.00000	.00000	.0000	******	.106	0	0
11	.00000	.00000	.0000	******	.129	0	0
12	.00000	.00000	.0000	******	.156	0	0
13	.00000	.00000	.0000	******	.181	0	0
14	.00000	.00000	.0000	******	.206	0	0
5	.00000	.00000	.0000	******	.229	0	0
15	.00000	.00000	.0000	******	.258	0	0
21	.00000	.00000	.0000	******	.284	0	0
22	.00000	.00000	.0000	******	.308	0	0
23	.00000	.00000	.0000	******	.331	0	0
24	.00000	.00000	.0000	******	.356	0	0
25	.00000	.00000	.0000	******	.385	0	0
26	.00000	.00000	.0000	******	.411	0	0

NOTE--

FLUX VALUES FLAGGED (******) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DIC

TOTAL ELAPSED TIME IN PROBLEM = 104.550 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10002 TRUE ANOMALY = 180.00000 TIME = .73402
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	++++++	.000	.000	.000	.000	.000	.000	.000	0	0	0
2	++++++	.000	.000	.000	.000	.000	.000	.059	0	0	0
3	++++++	.000	.000	.000	.000	.000	.000	.086	0	0	0
4	++++++	.000	.000	.000	.000	.000	.000	.114	0	0	0
11	++++++	.000	.000	.000	.000	.000	.000	.138	0	0	0
12	++++++	.000	.000	.000	.000	.000	.000	.164	0	0	0
13	++++++	.000	.000	.000	.000	.000	.000	.191	0	0	0
14	++++++	.000	.000	.000	.000	.000	.000	.216	0	0	0
5	++++++	.000	.155+02	.000	.000	.000	.000	.239	0	0	0
15	++++++	.000	.154+02	.000	.000	.000	.000	.266	0	0	0
21	++++++	.000	.742+02	.000	.000	.000	.000	.292	0	0	0
22	++++++	.000	.268+02	.000	.000	.000	.000	.317	0	0	0
23	++++++	.000	.264+02	.000	.000	.000	.000	.341	0	0	0
24	++++++	.000	.268+02	.000	.000	.000	.000	.370	0	0	0
25	++++++	.000	.264+02	.000	.000	.000	.000	.401	0	0	0
26	++++++	.000	.457+01	.000	.000	.000	.000	.427	0	0	0

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICOM

TOTAL ELAPSED TIME IN PROBLEM = 105.017 SECONDS
S,A,P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 158

MODEL=SAMPLE CONFIG=CASE1 STEP=10002 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10002	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10002

TOTAL TIME TO COMPUTE ABSORBED Q .16

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.720	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60900+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60900+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES.		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.359+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.104+03	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10003

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10003 TRUE ANOMALY = 105.71977 TIME = .43111
**** IN THE SUN ****

NODE NUMBER	DIRECT FLUX(BDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	SFTAPE	.001	9	0
2	.00000	.69478+01	.0000	SFTAPE	.068	9	0
3	.00000	.41697+03	.0000	SFTAPE	.109	81	0
4	.00000	.00000	.0000	SFTAPE	.146	9	0
11	.00000	.00000	.0000	SFTAPE	.180	9	0
12	.00000	.00000	.0000	SFTAPE	.216	9	0
13	.00000	.41697+03	.0000	SFTAPE	.250	81	0
14	.00000	.00000	.0000	SFTAPE	.298	9	0
5	.28468+03	.36602+03	.7778	CALC	.418	81	5
15	.28468+03	.36602+03	.7778	CALC	.542	81	5
21	.10066+03	.10066+03	1.0000	CALC	.670	55	10
22	.41696+03	.41696+03	1.0000	CALC	.834	78	10
23	.69478+01	.69478+01	1.0000	CALC	.884	9	5
24	.00000	.00000	.0000	SFTAPE	.919	8	0
25	.00000	.00000	.0000	SFTAPE	.955	9	0
26	.00000	.00000	.0000	SFTAPE	.990	8	0

NOTE--

FLUX VALUES FLAGGED (******) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DI

TOTAL ELAPSED TIME IN PROBLEM = 106.779 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 3 - FFCAL/CNCAL/OBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10003 TRUE ANOMALY = 105.71977 TIME = .43111
**** IN THE SUN ****

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	******	.000	.000	.000	.000	.000	.000	.001	0	8	0
2	******	.000	.000	.000	.000	.000	.000	.059	0	8	0
3	******	.000	.000	.000	.000	.000	.000	.087	0	8	0
4	******	.000	.000	.000	.000	.000	.000	.115	0	8	0
11	******	.000	.000	.000	.000	.000	.000	.140	0	8	0
12	******	.000	.000	.000	.000	.000	.000	.168	0	8	0
13	******	.000	.000	.000	.000	.000	.000	.194	0	8	0
14	******	.000	.000	.000	.000	.000	.000	.222	0	8	0
5	******	.000	.155+02	.000	.000	.000	.000	.247	0	8	0
15	******	.000	.154+02	.000	.000	.000	.000	.276	0	8	0
21	******	.000	.742+02	.000	.000	.000	.000	.311	0	8	0
22	******	.000	.260+02	.000	.000	.000	.000	.341	0	8	0
23	******	.000	.264+02	.000	.000	.000	.000	.367	0	8	0
24	******	.000	.268+02	.000	.000	.000	.000	.402	0	8	0
25	******	.000	.264+02	.000	.000	.000	.000	.430	0	8	0
26	******	.000	.457+01	.000	.000	.000	.000	.457	0	8	0

NOTE--

FLUX VALUES FLAGGED (******) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DIC

TOTAL ELAPSED TIME IN PROBLEM = 107.278 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 177

MODEL=SAMPLE CONFIG=CASE1 STEP=10003 SAMPLE CASE 3 - FFCAL/CNCAL/OBCAL/RCCAL/ORBGEN
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10003	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED.Q STORED IN STEP 10003

TOTAL TIME TO COMPUTE ABSORBED Q .15

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 3 - FFCAL/CRCAL/GECAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.920	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.359+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.104+03	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10004

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

DIRECT INCIDENT FLUXES CALCULATED USING SHADOW FACTORS

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 3 - FFCAL/CHCAL/GDCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10004 TRUE ANOMALY = 105.91977 TIME = .43193
**** IN THE SHADE ****

NODE NUMBER	DIRECT FLUX(QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	******	.001	0	0
2	.00000	.00000	.0000	******	.056	0	0
3	.00000	.00000	.0000	******	.085	0	0
4	.00000	.00000	.0000	******	.110	0	0
11	.00000	.00000	.0000	******	.138	0	0
12	.00000	.00000	.0000	******	.164	0	0
13	.00000	.00000	.0000	******	.190	0	0
14	.00000	.00000	.0000	******	.220	0	0
5	.00000	.00000	.0000	******	.244	0	0
15	.00000	.00000	.0000	******	.270	0	0
21	.00000	.00000	.0000	******	.297	0	0
22	.00000	.00000	.0000	******	.322	0	0
23	.00000	.00000	.0000	******	.347	0	0
24	.00000	.00000	.0000	******	.372	0	0
25	.00000	.00000	.0000	******	.399	0	0
26	.00000	.00000	.0000	******	.429	0	0

NOTE--

FLUX VALUES FLAGGED (******) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DIC

TOTAL ELAPSED TIME IN PROBLEM = 108.482 SECONDS

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 3 - FFCAL/CNCAL/OBCAL/RCCAL/ORBGEN
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10004 TRUE ANOMALY = 105.91977 TIME = .43193
**** IN THE SHADE ****

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	******	.000	.000	.000	.000	.000	.000	.001	0	0	0
2	******	.000	.000	.000	.000	.000	.000	.058	0	0	0
3	******	.000	.000	.000	.000	.000	.000	.087	0	0	0
4	******	.000	.000	.000	.000	.000	.000	.115	0	0	0
11	******	.000	.000	.000	.000	.000	.000	.138	0	0	0
12	******	.000	.000	.000	.000	.000	.000	.166	0	0	0
13	******	.000	.000	.000	.000	.000	.000	.194	0	0	0
14	******	.000	.000	.000	.000	.000	.000	.223	0	0	0
5	******	.000	.155+02	.000	.000	.000	.000	.246	0	0	0
15	******	.000	.154+02	.000	.000	.000	.000	.272	0	0	0
21	******	.000	.742+02	.000	.000	.000	.000	.298	0	0	0
22	******	.000	.269+02	.000	.000	.000	.000	.326	0	0	0
23	******	.000	.264+02	.000	.000	.000	.000	.352	0	0	0
24	******	.000	.268+02	.000	.000	.000	.000	.380	0	0	0
25	******	.000	.264+02	.000	.000	.000	.000	.409	0	0	0
26	******	.000	.457+01	.000	.000	.000	.000	.437	0	0	0

NOTE--

FLUX VALUES FLAGGED (******) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DIC

TOTAL ELAPSED TIME IN PROBLEM = 109.961 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 196

MODEL=SAMPLE CONFIG=CASE1 STEP=10004 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10004	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

ABSORBED Q STORED IN STEP 10004

TOTAL TIME TO COMPUTE ABSORBED Q .20

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 , SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED Q OUT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IQOTME	1	1	TIME ARRAY ID NUMBER FLUX TABLES START AT IQOTME + 1	N/A
QOTAPE	NO	2HNO	PARAMETER TO OUTPUT TO BCD TAPE	(4HTAPE,2HNO)
QOPNCH	NO	2HNO	PUNCH/NO PUNCH PARAMETER FOR OUTPUT	(3HPUN,2HNO)
QOAMPF	1.0000	1.0	AREA MULTIPLYING FACTOR	N/A
QOFMPF	1.0000	1.0	FLUX MULTIPLYING FACTOR	N/A
QOTMPF	1.0000	1.0	TIME MULTIPLYING FACTOR	N/A
QOTYPE	BOTH	NONE	PARAMETER TO DETERMINE TYPE OF OUTPUT	(3HTAB,2HAV,4HBOTH)
IQOARY	ALL	NONE	STEP NO. ARRAY DIRECTIVE	(3HALL,ARRAY NAME)

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED HEAT RATE TABLES PUNCHED

Q = INPUT * RMPF WHERE RMPF = .10000+01
TIME = INPUT * TMPF WHERE TMPF = .10000+01
AREA IS ON SUBROUTINE CALL CARDS

```
    1$ TIME ARRAY
   .000    ,   .367+00,   .431+00,   .432+00,   .734+00
END$
    2$  HEAT RATE ARRAY
   .268+03,   .560+03,   .551+03,   .532+02,   .532+02
END$
    3$  HEAT RATE ARRAY
   .122+03,   .484+02,   .507+02,   .264+02,   .264+02
END$
    4$  HEAT RATE ARRAY
   .151+03,   .956+02,   .101+03,   .529+02,   .529+02
END$
    5$  HEAT RATE ARRAY
   .464+03,   .188+03,   .299+03,   .140+03,   .140+03
END$
    6$  HEAT RATE ARRAY
   .177+03,   .484+02,   .546+02,   .264+02,   .264+02
END$
    7$  HEAT RATE ARRAY
   .311+03,   .396+03,   .378+03,   .384+02,   .384+02
END$
```

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

DA11MC SUBROUTINE CALL CARDS

```
                    AREA = INPUT (UNITS) * AMPF  WHERE AMPF =     .10000+01
DA11MC(1.46792175E 0,TIMEM,A1   ,A2   ,1.00000000E 0,Q1    )$
DA11MC(1.46792175E 0,TIMEM,A1   ,A3   ,1.00000000E 0,Q2    )$
DA11MC(1.46792175E 0,TIMEM,A1   ,A4   ,1.00000000E 0,Q3    )$
DA11MC(1.46792175E 0,TIMEM,A1   ,A5   ,1.00000000E 0,Q4    )$
DA11MC(1.46792175E 0,TIMEM,A1   ,A6   ,1.00000000E 0,Q12   )$
DA11MC(1.46792175E 0,TIMEM,A1   ,A7   ,1.00000000E 0,Q5    )$
```

MODEL=SAMPLE CONFIG=CASE1 STEP=10006 SAMPLE CASE 3 - FFCAL/CHCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

AVERAGE ORBITAL HEATING RATE AND AREA CARDS PUNCHED

VALUES ARE RATE = INPUT (UNITS) * RHPF WHERE RHPF = .10000+01
VALUES ARE AREA = INPUT (UNITS) * AHPF WHERE AHPF = .10000+01

Q1	=2.77859285E	2
Q2	=5.79530262E	1
Q3	=9.21390224E	1
Q4	=2.41824245E	2
Q12	=7.16434819E	1
Q5	=2.26533908E	2

TOTAL TIME TO COMPUTE ABSORBED Q OUT .39

MODEL=SAMPLE CONFIG=CASE2 STEP=10006 SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED Q OUT

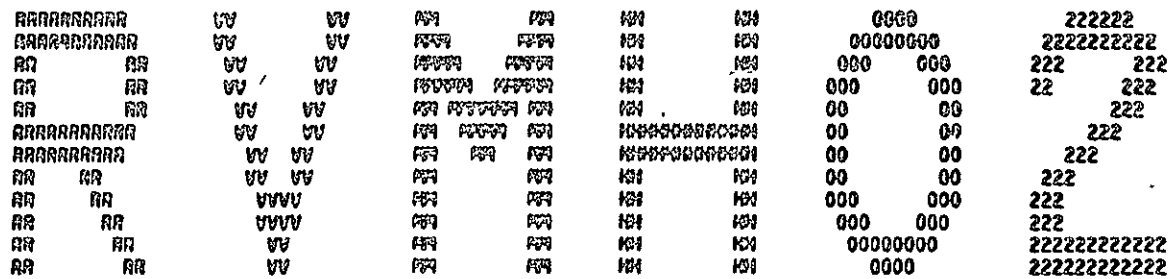
VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IQOTME	1	1	TIME ARRAY ID NUMBER FLUX TABLES START AT IQOTME + 1	N/A
QOTAPE	NO	2HNO	PARAMETER TO OUTPUT TO BCD TAPE	(4HTAPE,2HNO)
QOPNCH	NO	2HNO	PUNCH/NO PUNCH PARAMETER FOR OUTPUT	(3HPUN,2HNO)
QOAMPF	1.0000	1.0	AREA MULTIPLYING FACTOR	N/A
QOFMPF	1.0000	1.0	FLUX MULTIPLYING FACTOR	N/A
QOTMPF	1.0000	1.0	TIME MULTIPLYING FACTOR	N/A
QOTYPE	BOTH	NONE	PARAMETER TO DETERMINE TYPE OF OUTPUT	(3HTAB,2HAV,4HBOTH)
IQOARY	ALL	NONE	STEP NO. ARRAY DIRECTIVE	(3HALL,ARRAY NAME)

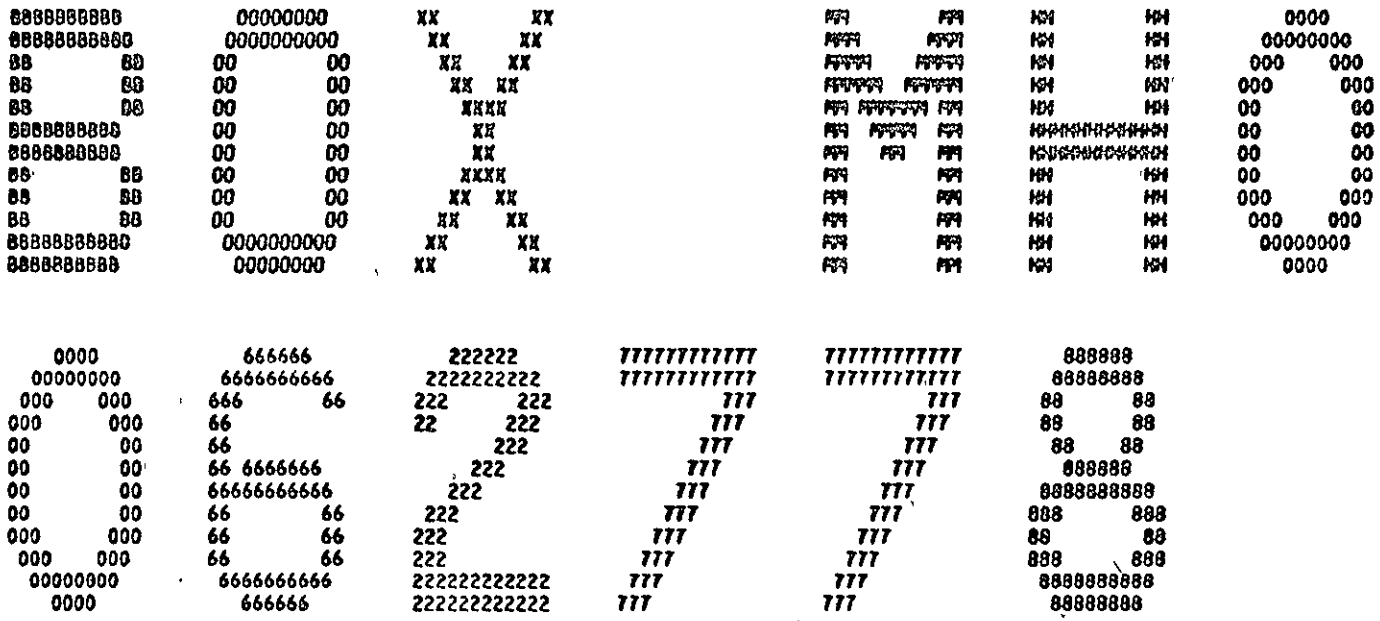
MODEL=SAMPLE CONFIG=CASE2 STEP=10006 SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED HEAT RATE TABLES PUNCHED

Q = INPUT * RNPF WHERE RNPF = .10000+01
TIME = INPUT * TNPF WHERE TNPF = .10000+01
AREA IS ON SUBROUTINE CALL CARDS

```
    1$ TIME ARRAY
   .000    ,   .367+00,   .431+00,   .432+00,   .734+00
END$
    2$  HEAT RATE ARRAY
   .268+03,   .560+03,   .551+03,   .532+02,   .532+02
END$
    3$  HEAT RATE ARRAY
   .122+03,   .484+02,   .507+02,   .264+02,   .264+02
END$
    4$  HEAT RATE ARRAY
   .151+03,   .956+02,   .101+03,   .529+02,   .529+02
END$
    5$  HEAT RATE ARRAY
   .464+03,   .188+03,   .299+03,   .140+03,   .140+03
END$
    6$  HEAT RATE ARRAY
   .177+03,   .484+02,   .546+02,   .264+02,   .264+02
END$
    7$  HEAT RATE ARRAY
   .311+03,   .396+03,   .378+03,   .384+02,   .384+02
END$
```





MODEL=SAMPLE CONFIG=CASE2 STEP=10006 SAMPLE CASE 3 - FFCAL/CNCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

DAIINC SUBROUTINE CALL CARDS

```
                    AREA = INPUT (UNITS) * AMPF  WHERE AMPF =     .10000+01
DAIINC(1.46792175E 0,TIMEM,A1   ,A2   ,1.00000000E 0,Q1   )$
DAIINC(1.46792175E 0,TIMEM,A1   ,A3   ,1.00000000E 0,Q2   )$
DAIINC(1.46792175E 0,TIMEM,A1   ,A4   ,1.00000000E 0,Q3   )$
DAIINC(1.46792175E 0,TIMEM,A1   ,A5   ,1.00000000E 0,Q4   )$
DAIINC(1.46792175E 0,TIMEM,A1   ,A6   ,1.00000000E 0,Q12  )$
DAIINC(1.46792175E 0,TIMEM,A1   ,A7   ,1.00000000E 0,Q5   )$
```

```
MODEL=SAMPLE CONFIG=CASE2  STEP=10006          SAMPLE CASE 3 - FFCAL/CMCAL/GBCAL/RCCAL/ORBGEN
ABSORBED Q OUTPUT COMPUTATION LINK.

                          AVERAGE ORBITAL HEATING RATE AND AREA CARDS PUNCHED

                              VALUES ARE    RATE = INPUT (UNITS) * RHPF   WHERE RHPF =    .10000+01
                              VALUES ARE    AREA = INPUT (UNITS) * AHPF   WHERE AHPF =    .10000+01

          Q1    =2.77859285E  2
          Q2    =5.79538262E  1
          Q3    =9.21390224E  1
          Q4    =2.41824245E  2
          Q12   =7.16434819E  1
          Q5    =2.26533908E  2


 TOTAL TIME TO COMPUTE ABSORBED Q OUT    .39

 NORMAL TERMINATION BY PROCESSOR



@PHD,PLEB


@BRKPT PRINTS
```

SAMPLE CASE 4

SAMPLE CASE 4

```
@ED,R VOGTD.CASE4
FILE IN FIELD 1 DISABLED--ACCEPTED
FILE IN FIELD 1 IN USE BY ANOTHER RUN
READ-ONLY MODE
CASE UPPER ASSUMED
ED 14.02-06/28-20:44-(0,)
EDIT
      1:@RUN,R/R RVHH04,3240-F261-C,ES3-N03711,05,150                NO DECK VOGT
     10:@ADD ES3-TRASYS*TRASYS.STARTH
     11:@ASG,T RSI.,BC,X04861
     12:@SETC 0100
     13:@ADD PREPRO
     14:HEADER OPTIONS DATA
     15:TITLE  SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
     16:C-----FORM TWO ENCLOSURES INSIDE THE BOX BY THE USE OF "MESS" NODES.
     17:C-----CLOSE THE BOX LID AND CALCULATE FORM FACTORS, GRAY BODY FACTORS,
     18:C-----AND RADK'S FOR EACH OF THE ENCLOSURES UTILIZING AN "ERN" NODE.
     19:C-----IN ENCLOSURE 2.
     20:C
     21:       MODEL        = SAMPLE
     22:       RSI          = RSTSAH
     23:       RSO          = RSTSAH4
     24:HEADER EDIT DATA
     25:*D,1
     26:HEADER ARRAY DATA
     27:       IPRIM1       = 101
     28:       ISEC1        = 111
     29:       IPRIM2       = 111
     30:       ISEC2        = 101
     31:HEADER SURFACE DATA
     32:*I,56
     33:BCS    LIDINL
     34:*I,121
     35:BCS    LIDINL,0.,0.,1.,0.,-45.,0.
     36:*I,171
     37:C
     38:C-----SPECIFY CALCULATION OF FORM FACTORS FOR ENCLOSURE 1 BY
     39:C-----THE USE OF UNIT-SPHERE LOGIC. (NO SHADOWING)
     40:C
     41:FIG    ENCL1
     42:UNIT
     43:C
     44:C-----SPECIFY CALCULATION OF FORM FACTORS FOR ENCLOSURE 2 BY
     45:C-----THE USE OF UNIT SPHERE LOGIC. (NO SHADOWING)
     46:C
     47:FIG    ENCL2
     48:UNIT
     49:*I,193
     50:C
     51:C-----FINISHED WITH RSI, RELEASE TAPE DRIVE.
     52:C
     53:       CALL RSTOFF
     54:*D,194,222
     55:C
     56:C-----CLOSE BOX LID
     57:C
     58:       CALL CHGBLK(LIDINR,0.,0.,1.,1,2,3,0.,0.,0.)
```

```
 59:       CALL CHGBLK(LIDINL,0.,0.,1.,1.,2.,3.,0.,0.,0.)
 60:C
 61:C-----BUILD ENCL1 CONFIGURATION
 62:C
 63:BUILD    ENCL1,BOXINR,LIDINR,MESSR
 64:C
 65:C-----CALCULATE FORM FACTORS FOR ENCLOSURE 1
 66:C
 67:       CALL RSTOFF
 68:L      FFCAL
 69:C
 70:C-----CHANGE EMITTANCES OF SURFACES FOR ENCL1
 71:C
 72:       CALL MODPR(1,,9,,5)
 73:       CALL MODPR(2,,9,,5)
 74:       CALL MODPR(3,,9,,5)
 75:       CALL MODPR(4,,9,,5)
 76:       CALL MODPR(5,,9,,5)
 77:C
 78:C-----PRINTOUT NODE DATA.
 79:C
 80:       CALL NODDAT
 81:C
 82:C-----CALCULATE GRAY BODY FACTORS FOR ENCLOSURE 1
 83:C
 84:       CALL GBDATA(IR,0,FF)
 85:L      GBCAL
 86:C
 87:C-----CALCULATE RADK'S FOR ENCLOSURE 1
 88:C
 89:       CALL RCDATA(0,0,0,0,0,0,0,0,0,0,0,0,0,IPRIM1,ISEC1)
 90:L      RCCAL
 91:C
 92:C-----BUILD ENCL2 CONFIGURATION
 93:C
 94:BUILD  ENCL2,BOXINL,LIDINL,MESSL
 95:C
 96:C-----CALCULATE FORM FACTORS FOR ENCLOSURE 2
 97:C
 98:L      FFCAL
 99:C
100:C-----CHANGE EMITTANCES OF SURFACES FOR ENCL2
101:C
102:      CALL MODPR(11,,9,,5)
103:      CALL MODPR(12,,9,,5)
104:      CALL MODPR(13,,9,,5)
105:      CALL MODPR(14,,9,,5)
106:      CALL MODPR(15,,9,,5)
107:C
108:C-----PRINTOUT NODE DATA.
109:C
110:      CALL NODDAT
111:C
112:C-----CALCULATE GRAY BODY FACTORS FOR ENCLOSURE 2
113:C
114:      CALL GBDATA(IR,5HENCL2,FF)
115:L     GBCAL
```

```
116:C
117:C-----CALCULATE RADK'S FOR ENCLOSURE 2 UTILIZING AN "ERN" NODE
118:C
119:       CALL RCDATA(0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,.5,1.,555.,IPRIM2,ISEC2)
120:L      RCCAL
121:@PND,BLEP
122:@ASG,T/S RS0..BC.RS0,92.RS0 APPENDIX H, CASE 4.
123:@ADD PROCSS
131:@FIN
NO CORRECTIONS APPLIED.


@FREE TPF$.


@ASG,T TPF$.,F4/D/TRK/400
```

```
@ED ES3-TRASYS*TRASYS.PREPROM,TPFS.PREPRO
CASE UPPER ASSUMED
ED 14.02-06/20-20:44-(0,)
EDIT
LINES:57 FIELDATA
```

```
@ED ES3-TRASYS*TRASYS.PROCSSH,TFFS.PROCSS
CASE UPPER ASSUMED
ED 14.02-06/28-20:44-41.)
EDIT
LINES:103 FIELDATA

@ASG,T RSI.,8C,X04061

@SETC 0100

@SETC,1

@ASG,AQ ES3-TRASYS*LIBRYN.
FAC HÄRNING        040200004000

@ASG,T 1.,F4/0/TRK/600

@ASG,T 2.,F4/0/TRK/600

@ASG,T 3.,F4/0/TRK/600

@ASG,T DIR.,F17/0/POS/5

@ASG,T FFR.,F17/0/POS/9

@ASG,T GBIRR.,F17/0/POS/5

@ASG,T RIO.,F17/0/POS/9

@ASG,T SQNTL.,F17/0/TRK/10
```

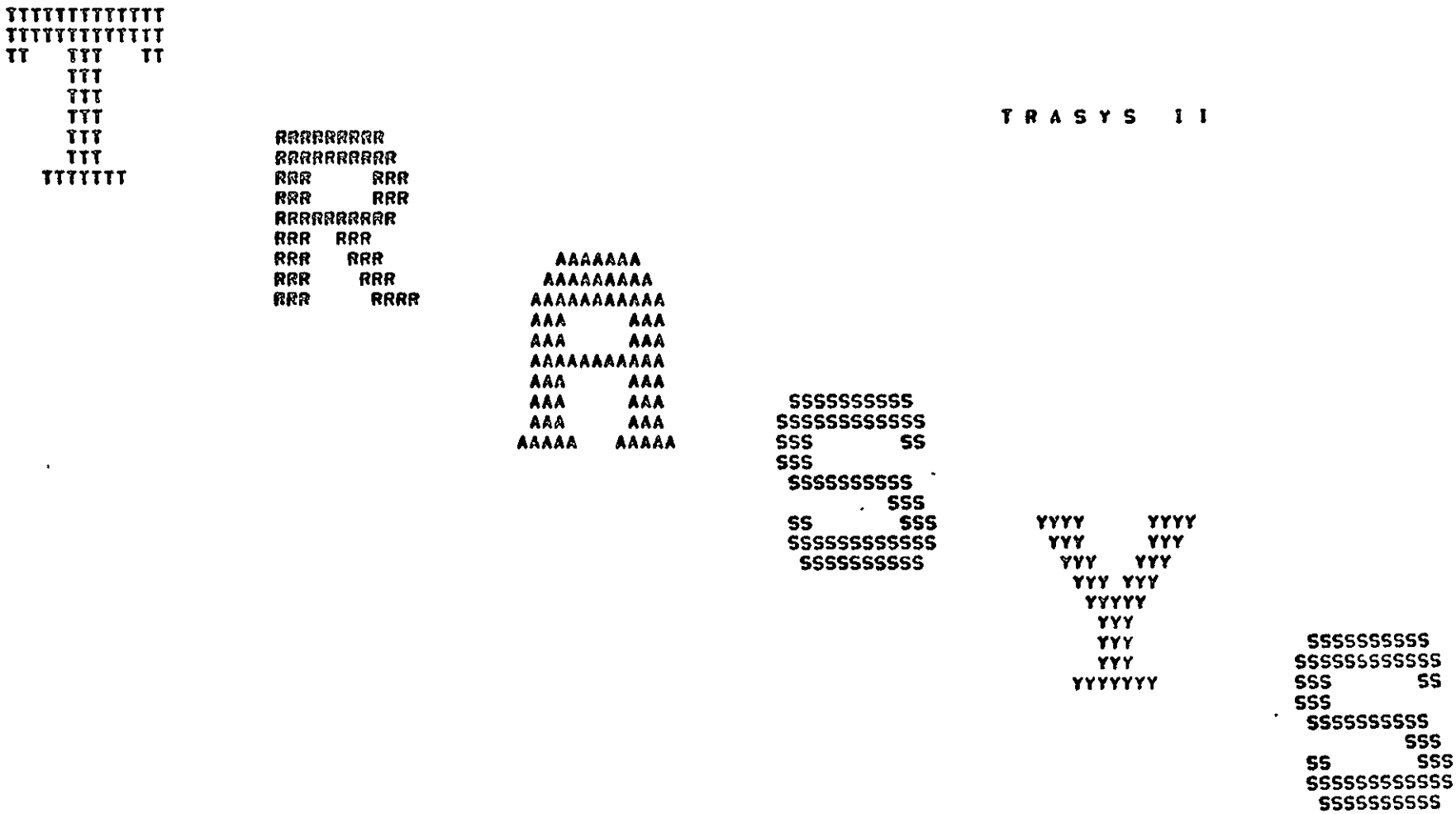
```
@ASG,T PLSR.,F17/0/TRK/320

@ASG,T TQR.,F17/0/TRK/320

@USE 0,RIO

@USE 14,RSI

@USE 16,SQNTL

@USE 21,FFR

@USE 22,DIR

@USE 23,GBIRR

@USE 25,PLSR

@USE 26,TQR

@XQT ES3-TRASYS*LIBRYN.CHECK

@TEST TNE/1/S3

@JUMP L1
INTERVENING STATEMENTS SKIPPED

@L1:ASG,T RI02.,F17/0/POS/9
```

```
@ASG,T RIOS.,F17/0/POS/20


@ASG,T DATA1.,F17/0/POS/9


@ASG,T CHPL.,F17/0/TRK/20


@ASG,T INFO


@ASG,T MAP.


@ASG,T MASS,F17/0/POS/20


@TEST TE/1/S6
INTERVENING STATEMENTS SKIPPED


@ASG,T MASS1,F/0/POS/20


@USE 15,MASS1


@COPY,G 14,15
FURPUR 27R1 RL72-8 06/28/78 20:44:55
ES3-N0*MASS(0) COPIED ON 06/22/78 AT 20:30:00
     3 BLOCKS COPIED.
EOF ENCOUNTERED ON INPUT TAPE


@ASG,T MASS2,F/0/POS/20


@MOVE RS1,7
FURPUR 27R1 RL72-8 06/28/78 20:46:08


@USE 4,MASS2
```

```
@XQT ES3-TRASYS*LIBRYN.LOAD
        END OF FILE AFTER PHYSICAL RECORD  187


@L15:FREE 14

@USE 4,DATA1

@USE 9,RIOS

@USE 10,RIO2

@USE 11,INFO

@USE 12,CMERG

@USE 13,EMERG

@USE 14,MASS1

@USE 15,MASS

@USE 20,CMPL

@USE 27,MAP

@ASG,AQ ES3-TRASYS*COMPLRN.
FAC WARNING        040200004000
```

```
@DATA.1 INFO.
DATA T7 RL76-5 06/28-20:47:36
END DATA.  IMAGE COUNT: 20


@XQT ES3-TRASYS*COMPLRN.ABS
```

NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
UNIVAC 1110/EXEC 8



PRE-PROCESSOR EXECUTION

VERSION.MODIFICATION ... UC2E3
MODIFICATION DATE 052678

DATE OF RUN 062878
TIME OF RUN 205211
JOB NUMBER RVMH04

```
DATE     062870 TIME     205212       THERMAL RADIATION ANALYSIS SYSTEM (TRASYS)  UNIVAC/EXC 8 VERSION      PAGE     1

MODEL = N/A
OPTION AND TITLE DATA BLOCKS

CARD ORGIN        12345670 1 2345670 2 2345670 3 2345670 4 2345670 5 2345670 6 2345670 7 2345670 8 EDIT NO. OLD EDIT NO.  LAB

INPUT             HEADER OPTIONS DATA
INPUT             TITLE  SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
INPUT             C-----FORM TWO ENCLOSURES INSIDE THE BOX BY THE USE OF ¤MESS¤ NODES.
INPUT             C-----CLOSE THE BOX LID AND CALCULATE FORM FACTORS, GRAY BODY FACTORS,
INPUT             C-----AND RADK'S FOR EACH OF THE ENCLOSURES UTILIZING AN ¤ERN¤ NODE.
INPUT             C-----IN ENCLOSURE 2.
INPUT             C
INPUT                    MODEL       = SAMPLE
INPUT                    RSI         = RSTSAM
INPUT                    RSO         = RSTSAM4
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
TRASYS INFORMATION TO USER

```
**********************************************************
*                                                        *
*    A T T E N T I O N   T R A S Y S   U S E R S         *
*                                                        *
**********************************************************
```

THIS SECTION OF THE TRASYS PRINTOUT WAS DEVISED TO INFORM THE TRASYS USERS OF THE STATUS OF THE TRASYS PROGRAM WITHOUT HAVING TO PRINTOUT ALL THE STATUS INFORMATION ON EVERY RUN. TO OBTAIN ADDITIONAL INFORMATION ON HOW TO USE THIS SECTION OF THE TRASYS PRINTOUT, PLACE A (INFO=INFO) IN THE OPTIONS DATA BLOCK.

FOR TRASYS ASSISTANCE AND/OR POSSIBLE TRASYS PROGRAM PROBLEMS, PLEASE CONTACT BOB VOGT AT JSC-2326.

NEWRL 08/29/77 DOCUMENTATION ADDITION

THE TRASYS -N- VERSION HAS BEEN UPDATED TO THE UC2E2 AND UL2E4 LEVEL.
SEE LATEST USERS MANUAL FOR INFORMATION ON USER-CALLED SUBROUTINE ARGUMENT CHANGES AND NEW CAPABILITIES.

END OF TRASYS INFORMATION FILE

MODEL = SAMPLE
MODEL HISTORY

SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL

MODEL NAME ..... SAMPLE

MODEL TITLE ..... SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL

MOD LABEL	RUN JOB NUMBER	RUN DATA	RUN TIME	RSI TAPE	RSO TAPE	RTI TAPE	RTO TAPE	CHERG TAPE	EMERG TAPE	BCDOU TAPE	TRAJ TAPE	USER1 TAPE	USER2 TAPE
AA	RVMH01	062278	202625		RSTSAM								
AB	RVMH04	062878	205212	RSTSAM	RSTSAM								

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GDCAL/RCCAL

SOURCE DATA EDIT DIRECTIVES

```
CARD ORGIN       12345670 1 2345670 2 2345670 3 2345670 4 2345670 5 2345670 6 2345670 7 2345670 0 EDIT NO. OLD EDIT NO.  LABEL
                 HEADER EDIT DATA
****             *D,1
   D             HEADER SURFACE DATA                                                          OLD-        1    AA
   I             HEADER ARRAY DATA                                                          1                     AB
   I                    IPRIM1      = 101                                                  2                     AB
   I                    ISEC1       = 111                                                  3                     AB
   I                    IPRIM2      = 111                                                  4                     AB
   I                    ISEC2       = 101                                                  5                     AB
   I             HEADER SURFACE DATA                                                       6                     AB
****             *I,56
   I             BCS    LIDINL                                                            62                     AB
****             *I,121
   I             BCS    LIDINL,0.,0.,1.,0.,-45.,0.                                        128                    AB
****             *I,171
   I             C                                                                        179                    AB
   I             C-----SPECIFY CALCULATION OF FORM FACTORS FOR ENCLOSURE 1 BY              180                    AB
   I             C-----THE USE OF UNIT-SPHERE LOGIC. (NO SHADOWING)                       181                    AB
   I             C                                                                        182                    AB
   I             FIG    ENCL1                                                             183                    AB
   I             UNIT                                                                     184                    AB
   I             C                                                                        185                    AB
   I             C-----SPECIFY CALCULATION OF FORM FACTORS FOR ENCLOSURE 2 BY              186                    AB
   I             C-----THE USE OF UNIT SPHERE LOGIC. (NO SHADOWING)                       187                    AB
   I             C                                                                        188                    AB
   I             FIG    ENCL2                                                             189                    AB
   I             UNIT                                                                     190                    AB
****             *I,193
   I             C                                                                        213                    AB
   I             C-----FINISHED WITH RSI, RELEASE TAPE DRIVE.                             214                    AB
   I             C                                                                        215                    AB
   I                   CALL RSTOFF                                                        216                    AB
****             *D,194,222
   D             C                                                                             OLD-      194   AA
   D             C-----BUILD THE CASE 1 CONFIGURATION                                          OLD-      195   AA
   D             C                                                                             OLD-      196   AA
   D             BUILD  CASE1,BOXINR,BOXINL,LIDINR,BOXOUT,LIDOUT                               OLD-      197   AA
   D             C                                                                             OLD-      198   AA
   D             C-----PLOT THE CASE 1 CONFIGURATION INDICATING THE ACTIVE                     OLD-      199   AA
   D             C-----SIDES OF THE NODES.                                                     OLD-      200   AA
   D             C                                                                             OLD-      201   AA
   D                   CALL NDATAS(0,0,0,YES,0)                                              OLD-      202   AA
   D             L     NPLOT                                                                   OLD-      203   AA
   D             C                                                                             OLD-      204   AA
   D             C-----CALCULATE SHADOW FACTOR TABLES FOR SUBSEQUENT USE                       OLD-      205   AA
   D             C-----SAMPLE CASE 2 IN THE CALCULATION OF DIRECT FLUXES.                      OLD-      206   AA
   D             C                                                                             OLD-      207   AA
   D             L     SFCAL                                                                   OLD-      208   AA
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL

SOURCE DATA EDIT DIRECTIVES

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
  D              C                                                                                  OLD-      209     AA
  D              C-----CALCULATE THE FORM FACTOR MATRIX.                                            OLD-      210     AA
  D              C                                                                                  OLD-      211     AA
  D              L      FFCAL                                                                       OLD-      212     AA
  D              C                                                                                  OLD-      213     AA
  D              C-----CALCULATE THE GRAY BODY MATRIX.                                              OLD-      214     AA
  D              C                                                                                  OLD-      215     AA
  D                     CALL GBDATA(BOTH,0,FF)                                                      OLD-      216     AA
  D              L      GBCAL                                                                       OLD-      217     AA
  D              C                                                                                  OLD-      218     AA
  D              C-----CALCULATE AND PUNCH RADIATION CONDUCTORS.                                    OLD-      219     AA
  D              C                                                                                  OLD-      220     AA
  D                     CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)                                      OLD-      221     AA
  D              L      RKCAL                                                                       OLD-      222     AA
  I              C                                                                      217                         AB
  I              C-----CLOSE BOX LID                                                    218                         AB
  I              C                                                                      219                         AB
  I                     CALL CHGBLK(LIDINR,0.,0.,1.,1,2,3,0.,0.,0.)                     220                         AB
  I                     CALL CHGBLK(LIDINL,0.,0.,1.,1,2,3,0.,0.,0.)                     221                         AB
  I              C                                                                      222                         AB
  I              C-----BUILD ENCL1 CONFIGURATION                                        223                         AB
  I              C                                                                      224                         AB
  I              BUILD    ENCL1,BOXINR,LIDINR,MESSR                                     225                         AB
  I              C                                                                      226                         AB
  I              C-----CALCULATE FORM FACTORS FOR ENCLOSURE 1                           227                         AB
  I              C                                                                      228                         AB
  I                     CALL RSTOFF                                                     229                         AB
  I              L      FFCAL                                                           230                         AB
  I              C                                                                      231                         AB
  I              C-----CHANGE EMITTANCES OF SURFACES FOR ENCL1                          232                         AB
  I              C                                                                      233                         AB
  I                     CALL MODPR(1,.9,.5)                                             234                         AB
  I                     CALL MODPR(2,.9,.5)                                             235                         AB
  I                     CALL MODPR(3,.9,.5)                                             236                         AB
  I                     CALL MODPR(4,.9,.5)                                             237                         AB
  I                     CALL MODPR(5,.9,.5)                                             238                         AB
  I              C                                                                      239                         AB
  I              C-----PRINTOUT NODE DATA.                                              240                         AB
  I              C                                                                      241                         AB
  I                     CALL NODDAT                                                     242                         AB
  I              C                                                                      243                         AB
  I              C-----CALCULATE GRAY BODY FACTORS FOR ENCLOSURE 1                      244                         AB
  I              C                                                                      245                         AB
  I                     CALL GBDATA(IR,0,FF)                                            246                         AB
  I              L      GBCAL                                                           247                         AB
  I              C                                                                      248                         AB
  1              C-----CALCULATE RADK'S FOR ENCLOSURE 1                                 249                         AB
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
SOURCE DATA EDIT DIRECTIVES

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
  I              C                                                                                    250                 AB
  I                    CALL RCDATA(0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,IPRIM1,ISEC1)  251                 AB
  I              L     RCCAL                                                                          252                 AB
  I              C                                                                                    253                 AB
  I              C-----BUILD ENCL2 CONFIGURATION                                                      254                 AB
  I              C                                                                                    255                 AB
  I              BUILD  ENCL2,BOXINL,LIDINL,MESSL                                                     256                 AB
  I              C                                                                                    257                 AB
  I              C-----CALCULATE FORM FACTORS FOR ENCLOSURE 2                                         258                 AB
  I              C                                                                                    259                 AB
  I              L     FFCAL                                                                          260                 AB
  I              C                                                                                    261                 AB
  I              C-----CHANGE EMITTANCES OF SURFACES FOR ENCL2                                        262                 AB
  I              C                                                                                    263                 AB
  I                    CALL MODPR(11,,9,,5)                                                           264                 AB
  I                    CALL MODPR(12,,9,,5)                                                           265                 AB
  I                    CALL MODPR(13,,9,,5)                                                           266                 AB
  I                    CALL MODPR(14,,9,,5)                                                           267                 AB
  I                    CALL MODPR(15,,9,,5)                                                           268                 AB
  I              C                                                                                    269                 AB
  I              C-----PRINTOUT NODE DATA.                                                            270                 AB
  I              C                                                                                    271                 AB
  I                    CALL MODDAT                                                                    272                 AB
  I              C                                                                                    273                 AB
  I              C-----CALCULATE GRAY BODY FACTORS FOR ENCLOSURE 2                                    274                 AB
  I              C                                                                                    275                 AB
  I                    CALL GBDATA(1R,5HENCL2,FF)                                                     276                 AB
  I              L     GBCAL                                                                          277                 AB
  I              C                                                                                    278                 AB
  I              C-----CALCULATE RADK'S FOR ENCLOSURE 2 UTILIZING AN "ERN" NODE                       279                 AB
  I              C                                                                                    280                 AB
  I                    CALL RCDATA(0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,..5.1..555.1PRIM2,ISEC2)           281                 AB
  I              L     RCCAL                                                                          282                 AB
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
ARRAY DATA INPUT BLOCK

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL

INPUT             HEADER ARRAY DATA                                                                    1                 AB
INPUT                    IPRIM1      = 101                                                           2                 AB
INPUT                    ISEC1       = 111                                                           3                 AB
INPUT                    IPRIM2      = 111                                                           4                 AB
INPUT                    ISEC2       = 101                                                           5                 AB
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
SURFACE DATA INPUT BLOCK

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
INPUT            HEADER SURFACE DATA                                                                    6              AB
RSI              C                                                                                      7  OLD-        2   AA
RSI              C------THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5                       8  OLD-        3   AA
RSI              C------WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT                    9  OLD-        4   AA
RSI              C------CASES.                                                                         10  OLD-        5   AA
RSI              C                                                                                     11  OLD-        6   AA
RSI              BCS    BOXINR                                                                         12  OLD-        7   AA
RSI              S      SURFN       = 1                                                                13  OLD-        8   AA
RSI                     TYPE        = RECT                                                             14  OLD-        9   AA
RSI                     ACTIVE      = BOTTOM                                                           15  OLD-       10   AA
RSI                     PROP        = 0.9,0.9                                                          16  OLD-       11   AA
RSI                     P1          = 1.0, 0.0, 1.0                                                    17  OLD-       12   AA
RSI                     P2          = 1.0, 0.0, 0.0                                                    18  OLD-       13   AA
RSI                     P3          = 1.0, 1.0, 0.0                                                    19  OLD-       14   AA
RSI                     COM         = ' INNER RIGHT FRONT '                                            20  OLD-       15   AA
RSI              S      SURFN       = 2                                                                21  OLD-       16   AA
RSI                     TYPE        = RECT                                                             22  OLD-       17   AA
RSI                     ACTIVE      = BOTTOM                                                           23  OLD-       18   AA
RSI                     PROP        = 0.9,0.9                                                          24  OLD-       19   AA
RSI                     P1          = 1.0, 1.0, 1.0                                                    25  OLD-       20   AA
RSI                     P2          = 1.0, 1.0, 0.0                                                    26  OLD-       21   AA
RSI                     P3          = 0.0, 1.0, 0.0                                                    27  OLD-       22   AA
RSI                     COM         = ' INNER RIGHT SIDE '                                             28  OLD-       23   AA
RSI              S      SURFN       = 3                                                                29  OLD-       24   AA
RSI                     TYPE        = RECT                                                             30  OLD-       25   AA
RSI                     ACTIVE      = TOP                                                              31  OLD-       26   AA
RSI                     PROP        = 0.9,0.9                                                          32  OLD-       27   AA
RSI                     P1          = 0.0, 0.0, 1.0                                                    33  OLD-       28   AA
RSI                     P2          = 0.0, 0.0, 0.0                                                    34  OLD-       29   AA
RSI                     P3          = 0.0, 1.0, 0.0                                                    35  OLD-       30   AA
RSI                     COM         = ' INNER RIGHT BACK '                                             36  OLD-       31   AA
RSI              S      SURFN       = 4                                                                37  OLD-       32   AA
RSI                     TYPE        = RECT                                                             38  OLD-       33   AA
RSI                     ACTIVE      = TOP                                                              39  OLD-       34   AA
RSI                     PROP        = 0.9,0.9                                                          40  OLD-       35   AA
RSI                     P1          = 1.0, 1.0, 0.0                                                    41  OLD-       36   AA
RSI                     COM         = ' INNER RIGHT BOTTOM '                                           42  OLD-       37   AA
RSI              BCS    BOXINL,INGBCS=BOXINR,NINC=10,IREFSF=1000                                       43  OLD-       38   AA
RSI              C                                                                                     44  OLD-       39   AA
RSI              C------THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000                     45  OLD-       40   AA
RSI              C------TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX WAS INPUT IN                      46  OLD-       41   AA
RSI              C------THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW                     47  OLD-       42   AA
RSI              C------THE USE OF 'MESS' AND 'ERN' NODES.                                              48  OLD-       43   AA
RSI              C                                                                                     49  OLD-       44   AA
```

IMAGING SURFACE (1) BCS (BOXINR), GENERATING SURFACE (11) BCS (BOXINL)
IMAGING SURFACE (2) BCS (BOXINR), GENERATING SURFACE (12) BCS (BOXINL)
IMAGING SURFACE (3) BCS (BOXINR), GENERATING SURFACE (13) BCS (BOXINL)

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
SURFACE DATA INPUT BLOCK

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

                 IMAGING SURFACE (    9) BCS (BOXINR), GENERATING SURFACE (   14) BCS (BOXINL)
RSI          R   REFNO      = 1000                                                          50  OLD-      45   AA
RSI              P1         = 1.0, 0.0, 1.0                                                 51  OLD-      46   AA
RSI              P2         = 1.0, 0.0, 0.0                                                 52  OLD-      47   AA
RSI              P3         = 0.0, 0.0, 0.0                                                 53  OLD-      48   AA
RSI              COM        = * IMAGING PLANE *                                             54  OLD-      49   AA
RSI          BCS LIDINR                                                                     55  OLD-      50   AA
RSI          S   SURFN      = 5                                                             56  OLD-      51   AA
RSI              TYPE       = RECT                                                          57  OLD-      52   AA
RSI              ACTIVE     = BOTTOM                                                        58  OLD-      53   AA
RSI              PROP       = 0.9,0.9                                                       59  OLD-      54   AA
RSI              P1         = 1.0, 1.0, 0.0                                                 60  OLD-      55   AA
RSI              COM        = * INNER RIGHT LID *                                           61  OLD-      56   AA
INPUT        BCS LIDINL                                                                     62                   AB
RSI          S   SURFN      = 15                                                            63  OLD-      57   AA
RSI              IMAGSF     = 5                                                             64  OLD-      58   AA
RSI              IREFSF     = 1000                                                          65  OLD-      59   AA
RSI              COM        = * INNER LEFT LID *                                            66  OLD-      60   AA
RSI          BCS BOXOUT                                                                     67  OLD-      61   AA
RSI          S   SURFN      = 21                                                            68  OLD-      62   AA
RSI              TYPE       = BOX5                                                          69  OLD-      63   AA
RSI              ACTIVE     = OUT                                                           70  OLD-      64   AA
RSI              SHADE      = NO                                                            71  OLD-      65   AA
RSI              PROP       = 0.2,0.9                                                       72  OLD-      66   AA
RSI              P1         = 1.01,-1.01, 1.01                                              73  OLD-      67   AA
RSI              P2         = 1.01, 1.01, 1.01                                              74  OLD-      68   AA
RSI              P3         =-0.01, 1.01, 1.01                                              75  OLD-      69   AA
RSI              P4         =-0.01, 1.01,-0.01                                              76  OLD-      70   AA
RSI              COM        = * OUTER SURFACES *                                            77  OLD-      71   AA
RSI          BCS LIDOUT                                                                     78  OLD-      72   AA
RSI          S   SURFN      = 26                                                            79  OLD-      73   AA
RSI              TYPE       = RECT                                                          80  OLD-      74   AA
RSI              ACTIVE     = TOP                                                           81  OLD-      75   AA
RSI              SHADE      = NO                                                            82  OLD-      76   AA
RSI              PROP       = 0.2,0.9                                                       83  OLD-      77   AA
RSI              P1         = 1.01,-1.01, 0.01                                              84  OLD-      78   AA
RSI              P2         = 1.01, 1.01, 0.01                                              85  OLD-      79   AA
RSI              P3         =-0.01, 1.01, 0.01                                              86  OLD-      80   AA
RSI              COM        = * OUTER SURFACE OF LID *                                      87  OLD-      81   AA
RSI          C                                                                              88  OLD-      82   AA
RSI          C-----THE NEXT TWO BCS'S (HESSR AND HESSL) ARE ACTIVATED IN SAMPLE             89  OLD-      83   AA
RSI          C-----CASE 4 ONLY.                                                             90  OLD-      84   AA
RSI          C                                                                              91  OLD-      85   AA
RSI          BCS HESSR                                                                      92  OLD-      86   AA
RSI          S   SURFN      = 101                                                           93  OLD-      87   AA
RSI              TYPE       = RECT                                                          94  OLD-      88   AA
RSI              ACTIVE     = TOP                                                           95  OLD-      89   AA
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
SURFACE DATA INPUT BLOCK

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI                    PROP       = 1.0,1.0                                                      96  OLD-      90    AA
RSI                    P1         = 1.0, 0.0, 1.0                                                97  OLD-      91    AA
RSI                    P2         = 1.0, 0.0, 0.0                                                98  OLD-      92    AA
RSI                    P3         = 0.0, 0.0, 0.0                                                99  OLD-      93    AA
RSI                    COM        = * PRIMARY MESS NODE, RIGHT SIDE *                           100  OLD-      94    AA
RSI              BCS   MESSL                                                                     101  OLD-      95    AA
RSI              S     SURFN      = 111                                                          102  OLD-      96    AA
RSI                    TYPE       = RECT                                                         103  OLD-      97    AA
RSI                    ACTIVE     = BOTTON                                                       104  OLD-      98    AA
RSI                    PROP       = 1.0,1.0                                                      105  OLD-      99    AA
RSI                    P1         = 1.0, 0.0, 1.0                                                106  OLD-     100    AA
RSI                    P2         = 1.0, 0.0, 0.0                                                107  OLD-     101    AA
RSI                    P3         = 0.0, 0.0, 0.0                                                108  OLD-     102    AA
RSI                    COM        = * PRIMARY MESS NODE, LEFT SIDE *                             109  OLD-     103    AA
RSI              C                                                                               110  OLD-     104    AA
RSI              C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.             111  OLD-     105    AA
RSI              C                                                                               112  OLD-     106    AA
RSI              BCS   LIDSP                                                                     113  OLD-     107    AA
RSI              S     SURFN      = 200                                                          114  OLD-     108    AA
RSI                    TYPE       = RECT                                                         115  OLD-     109    AA
RSI                    ACTIVE     = BOTTON                                                       116  OLD-     110    AA
RSI                    PROP       = 0.1,0.1                                                      117  OLD-     111    AA
RSI                    SPR1       = 0.8                                                          118  OLD-     112    AA
RSI                    SPRS       = 0.8                                                          119  OLD-     113    AA
RSI                    P1         = 1.0,-1.0, 0.0                                                120  OLD-     114    AA
RSI                    P2         = 1.0, 1.0, 0.0                                                121  OLD-     115    AA
RSI                    P3         = 0.0, 1.0, 0.0                                                122  OLD-     116    AA
RSI                    COM        = * SPECULAR LID *                                             123  OLD-     117    AA
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
BCS DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

RSI             HEADER BCS DATA                                                                  124  OLD-     118   AA
RSI             BCS    BOXINR                                                                    125  OLD-     119   AA
RSI             BCS    BOXINL                                                                    126  OLD-     120   AA
RSI             BCS    LIDINR .0..0..1..0..-45..0.                                               127  OLD-     121   AA
INPUT           BCS    LIDINL.0..0..1..0..-45..0.                                                128                    AB
RSI             BCS    BOXOUT                                                                    129  OLD-     122   AA
RSI             BCS    LIDOUT .0..0..1..0..-45..0.                                               130  OLD-     123   AA
RSI             BCS    MESSR                                                                     131  OLD-     124   AA
RSI             BCS    MESSL                                                                     132  OLD-     125   AA
RSI             BCS    LIDSP  .0..0..1..0..-45..0.                                               133  OLD-     126   AA
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
RSI             HEADER FORM FACTOR DATA                                                          134  OLD-    127    AA
RSI             C                                                                                135  OLD-    128    AA
RSI             C------ENTER KNOWN ZERO FORM FACTORS AND EQUIVALENT FORM FACTORS FOR              136  OLD-    129    AA
RSI             C------CASE1.                                                                    137  OLD-    130    AA
RSI             C                                                                                138  OLD-    131    AA
RSI             FIG    CASE1                                                                     139  OLD-    132    AA
RSI             NODEA  1,2,3,4,11,12,13,14,5,15,21,22,23,24,25,26,END                            140  OLD-    133    AA
RSI             BOTH   21,ZERO                                                                   141  OLD-    134    AA
RSI                    22,ZERO                                                                   142  OLD-    135    AA
RSI                    23,ZERO                                                                   143  OLD-    136    AA
RSI                    24,ZERO                                                                   144  OLD-    137    AA
RSI                    25,ZERO                                                                   145  OLD-    138    AA
RSI                    26,ZERO                                                                   146  OLD-    139    AA
RSI                    1,1,0.                                                                    147  OLD-    140    AA
RSI                    11,12,1,2                                                                 148  OLD-    141    AA
RSI                    11,13,1,3                                                                 149  OLD-    142    AA
RSI                    11,14,1,4                                                                 150  OLD-    143    AA
RSI                    11,15,1,5                                                                 151  OLD-    144    AA
RSI                    1,11,0.                                                                   152  OLD-    145    AA
RSI                    11,2,1,12                                                                 153  OLD-    146    AA
RSI                    11,3,1,13                                                                 154  OLD-    147    AA
RSI                    11,4,1,14                                                                 155  OLD-    148    AA
RSI                    11,5,1,15                                                                 156  OLD-    149    AA
RSI                    2,2,0.                                                                    157  OLD-    150    AA
RSI                    2,3,1,2                                                                   158  OLD-    151    AA
RSI                    2,4,1,4                                                                   159  OLD-    152    AA
RSI                    12,13,2,3                                                                 160  OLD-    153    AA
RSI                    12,14,2,4                                                                 161  OLD-    154    AA
RSI                    12,15,2,5                                                                 162  OLD-    155    AA
RSI                    12,3,2,13                                                                 163  OLD-    156    AA
RSI                    12,4,2,14                                                                 164  OLD-    157    AA
RSI                    12,5,2,15                                                                 165  OLD-    158    AA
RSI                    3,3,0.                                                                    166  OLD-    159    AA
RSI                    3,4,1,4                                                                   167  OLD-    160    AA
RSI                    13,14,3,4                                                                 168  OLD-    161    AA
RSI                    13,15,3,5                                                                 169  OLD-    162    AA
RSI                    3,13,0.                                                                   170  OLD-    163    AA
RSI                    13,4,3,14                                                                 171  OLD-    164    AA
RSI                    13,5,3,15                                                                 172  OLD-    165    AA
RSI                    4,4,0.                                                                    173  OLD-    166    AA
RSI                    14,15,4,5                                                                 174  OLD-    167    AA
RSI                    4,14,0.                                                                   175  OLD-    168    AA
RSI                    14,5,4,15                                                                 176  OLD-    169    AA
RSI                    5,5,0.                                                                    177  OLD-    170    AA
RSI                    5,15,0.                                                                   178  OLD-    171    AA
INPUT           C                                                                                179                 AB
INPUT           C------SPECIFY CALCULATION OF FORM FACTORS FOR ENCLOSURE 1 BY                      180                 AB
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/EDCAL/RCCAL
FORM FACTOR DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT           C-----THE USE OF UNIT-SPHERE LOGIC. (NO SHADOWING)                                  101                AB
INPUT           C                                                                                   102                AB
INPUT           FIG    ENCL1                                                                        103                AB
INPUT           UNIT                                                                                104                AB
INPUT           C                                                                                   105                AB
INPUT           C-----SPECIFY CALCULATION OF FORM FACTORS FOR ENCLOSURE 2 BY                         106                AB
INPUT           C-----THE USE OF UNIT SPHERE LOGIC. (NO SHADOWING)                                  107                AB
INPUT           C                                                                                   108                AB
INPUT           FIG    ENCL2                                                                        109                AB
INPUT           UNIT                                                                                110                AB
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
CORRESPONDENCE DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL
RSI             HEADER CORRESPONDENCE DATA                                                        191  OLD-    172   AA
RSI             C                                                                                 192  OLD-    173   AA
RSI             C-----ENTER CORRESPONDENCE DATA FOR CASE 2                                        193  OLD-    174   AA
RSI             C                                                                                 194  OLD-    175   AA
RSI             FIO    CASE2                                                                      195  OLD-    176   AA
RSI                    1          = 1,11,22                                                      196  OLD-    177   AA
RSI                    2          = 2,25                                                         197  OLD-    178   AA
RSI                    3          = 3,13,24                                                      198  OLD-    179   AA
RSI                    4          = 4,14,21                                                      199  OLD-    180   AA
RSI                    5          = 5,15,26                                                      200  OLD-    181   AA
RSI                    12         = 12,23                                                        201  OLD-    182   AA
RSI             C                                                                                 202  OLD-    183   AA
RSI             C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS                 203  OLD-    184   AA
RSI             C                                                                                 204  OLD-    185   AA
RSI             FIO    CASE3.FF                                                                   205  OLD-    186   AA
RSI                    1          = 1,11,22                                                      206  OLD-    187   AA
RSI                    2          = 2,25                                                         207  OLD-    188   AA
RSI                    3          = 3,13,24                                                      208  OLD-    189   AA
RSI                    4          = 4,14,21                                                      209  OLD-    190   AA
RSI                    5          = 5,15,26                                                      210  OLD-    191   AA
RSI                    12         = 12,23                                                        211  OLD-    192   AA
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
OPERATION DATA INPUT BLOCK (PASS 1)

```
CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL
RSI               HEADER OPERATIONS DATA                                                          212  OLD-     193   AA
```

+++++ OPERATIONS DATA BLOCK (PASS 1) COMPLETE +++++

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
OPERATION DATA INPUT BLOCK (PASS 2)

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 0 EDIT NO. OLD EDIT NO.  LABEL
INPUT           C                                                                                    213                 AB
INPUT           C-----FINISHED WITH RSI. RELEASE TAPE DRIVE.                                         214                 AB
INPUT           C                                                                                    215                 AB
INPUT                 CALL RSTOFF                                                                    216                 AB
INPUT           C                                                                                    217                 AB
INPUT           C-----CLOSE BOX LID                                                                  218                 AB
INPUT           C                                                                                    219                 AB
INPUT                 CALL CHGBLK(LIDINR,0.,0.,1.,1,2,3,0.,0.,0.)                                    220                 AB
INPUT                 CALL CHGBLK(LIDINL,0.,0.,1.,1,2,3,0.,0.,0.)                                    221                 AB
INPUT           C                                                                                    222                 AB
INPUT           C-----BUILD ENCL1 CONFIGURATION                                                      223                 AB
INPUT           C                                                                                    224                 AB
PROG            STEP      -1                                                                           0
INPUT           BUILD    ENCL1,BOXINR,LIDINR,MESSR                                                 225                 AB
PROG                  CALL BUILDC (BOXINR,6HENCL1 )                                                  0
PROG                  CALL ADD (LIDINR)                                                              0
PROG                  CALL ADD (MESSR )                                                              0
INPUT           C                                                                                    226                 AB
INPUT           C-----CALCULATE FORM FACTORS FOR ENCLOSURE 1                                         227                 AB
INPUT           C                                                                                    228                 AB
INPUT                 CALL RSTOFF                                                                    229                 AB
INPUT           L     FFCAL                                                                          230                 AB
INPUT           C                                                                                    231                 AB
INPUT           C-----CHANGE EMITTANCES OF SURFACES FOR ENCL1                                        232                 AB
INPUT           C                                                                                    233                 AB
INPUT                 CALL MODPR(1,.9,.5)                                                            234                 AB
INPUT                 CALL MODPR(2,.9,.5)                                                            235                 AB
INPUT                 CALL MODPR(3,.9,.5)                                                            236                 AB
INPUT                 CALL MODPR(4,.9,.5)                                                            237                 AB
INPUT                 CALL MODPR(5,.9,.5)                                                            238                 AB
INPUT           C                                                                                    239                 AB
INPUT           C-----PRINTOUT NODE DATA.                                                            240                 AB
INPUT           C                                                                                    241                 AB
INPUT                 CALL NODDAT                                                                    242                 AB
INPUT           C                                                                                    243                 AB
INPUT           C-----CALCULATE GRAY BODY FACTORS FOR ENCLOSUPE 1                                    244                 AB
INPUT           C                                                                                    245                 AB
INPUT                 CALL GBDATA(1R,0,FF)                                                           246                 AB
INPUT           L     GBCAL                                                                          247                 AB
INPUT           C                                                                                    248                 AB
INPUT           C-----CALCULATE RADK'S FOR ENCLOSURE 1                                               249                 AB
INPUT           C                                                                                    250                 AB
INPUT                 CALL RCDATA(0,0,0,0,0,0,0,0,0,0,0,0,0,0,IPRIM1,ISEC1)                          251                 AB
INPUT           L     RCCAL                                                                          252                 AB
INPUT           C                                                                                    253                 AB
INPUT           C-----BUILD ENCL2 CONFIGURATION                                                      254                 AB
INPUT           C                                                                                    255                 AB
PROG            STEP      -2                                                                           0
INPUT           BUILD  ENCL2,BOXINL,LIDINL,MESSL                                                   256                 AB
```

```
PROG                    CALL BUILDC (BOXINL,6HENCL2 )                    0
PROG                    CALL ADD (LIDINL)                                0
PROG                    CALL ADD (MESSL )                                0
INPUT          C                                                         257   AB
INPUT          C-----CALCULATE FORM FACTORS FOR ENCLOSURE 2              258   AB
INPUT          C                                                         259   AB
INPUT          L        FFCAL                                            260   AB
INPUT          C                                                         261   AB
INPUT          C-----CHANGE EMITTANCES OF SURFACES FOR ENCL2             262   AB
INPUT          C                                                         263   AB
INPUT                   CALL NODPR(11,.9,.5)                             264   AB
INPUT                   CALL NODPR(12,.9,.5)                             265   AB
INPUT                   CALL NODPR(13,.9,.5)                             266   AB
INPUT                   CALL NODPR(14,.9,.5)                             267   AB
INPUT                   CALL NODPR(15,.9,.5)                             268   AB
INPUT          C                                                         269   AB
INPUT          C-----PRINTOUT NODE DATA.                                 270   AB
INPUT          C                                                         271   AB
INPUT                   CALL NODDAT                                      272   AB
INPUT          C                                                         273   AB
INPUT          C-----CALCULATE GRAY BODY FACTORS FOR ENCLOSURE 2         274   AB
INPUT          C                                                         275   AB
INPUT                   CALL GBDATA(IR,5HENCL2,FF)                       276   AB
INPUT          L        GBCAL                                            277   AB
INPUT          C                                                         278   AB
INPUT          C-----CALCULATE RADK'S FOR ENCLOSURE 2 UTILIZING AN "ERN" NODE  279   AB
INPUT          C                                                         280   AB
INPUT                   CALL RCDATA(0.,0.,0.,0.,0.,0.,0.,0.,0.,.5,1.,555,IPRIM2,ISEC2)  281   AB
INPUT          L        RCCAL                                            282   AB
RSI            END OF DATA                                               283   AA
```

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
PROCESSOR CORE ALLOCATION

THE FOLLOWING IS THE PROCESSOR CORE ALLOCATION FOR THOSE SEGMENTS WHICH WILL BE LOADED IN THIS EXECUTION (APPROX.) ...

	OCTAL/DECIMAL
TRASYS (0) SEGMENT	121222/ 41618
OPERATIONS DATA (NOT KNOWN AT THIS TIME)	175000/ 64000
INITALIZATION SEGMENT	122300/ 42176
FORM FACTOR SEGMENT	136100/ 48192
GRAY BODY SEGMENT	124000/ 43008
RADATION CONDUCTOR SEGMENT	125500/ 43840
GRAY BODY DYNAMIC COMMON	000276/ 190
RADIATION CONDUCTOR DYNAMIC COMMON	000574/ 380
GRAY BODY MINIMUM - MAXIMUM CORE	123575/ 42877 - 123725/ 42965
RADIATION CONDUCTOR MINIMUM - MAXIMUM CORE	125230/ 43672 - 125474/ 43836
MINIMUM CORE NEEDED FOR PROCESSOR EXECUTION	136100/ 48192
MAXIMUM CORE NEEDED FOR PROCESSOR EXECUTION	136100/ 48192
AMOUNT OF CORE THAT WILL BE USED BY PROCESSSOR	136100/ 48192

MODEL = SAMPLE SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
WRAP UP OF THE PRE-PROCESSOR

PRE-PROCESSOR ACCOUNTING INFORMATION	CP-SEC	DYN-STORAGE
SOURCE EDITING	1.534	676
DOCUMENTATION DATA PRE-PROCESSING	.000	0
QUANTITIES DATA PRE-PROCESSING	.027	266
ARRAY DATA PRE-PROCESSING	.002	20
SURFACE DATA PRE-PROCESSING (PASS 1)	1.090	64
SURFACE DATA PRE-PROCESSING (PASS 2)	.489	1141
BCS DATA PRE-PROCESSING	.172	201
FORM FACTOR DATA PRE-PROCESSING	.763	1169
SHADOW DATA PRE-PROCESSING	.000	0
FLUX DATA PRE-PROCESSING	.000	0
CORRESPONDENCE DATA PRE-PROCESSING	.211	101
OPERATIONS DATA PRE-PROCESSING	2.038	892
SUBROUTINE DATA PRE-PROCESSING	.147	0
SEQENTIAL TAPE INITIALIZATION	.022	0

TOTAL CP TIME FOR PRE-PROCESSOR ..... 6.963 DECIMAL SECONDS OR 000007 OCTAL SECONDS

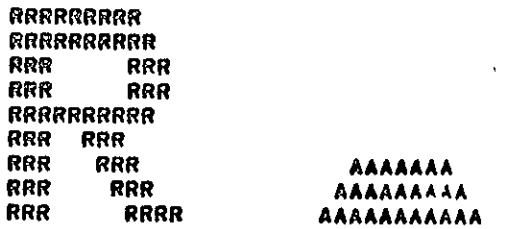
MINIMUM DYNAMIC STORAGE NEEDED BY PRE-PROCESSOR .. 1169 DECIMAL WORDS

DYNAMIC STORAGE AVAILABLE TO PRE-PROCESSOR ..... 10000 DECIMAL WORDS

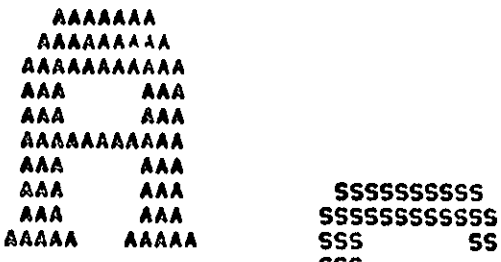
NORMAL TERMINATION BY PRE-PROCESSOR

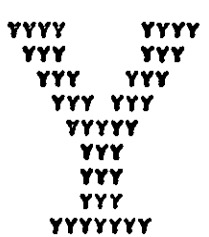
```
@PHD,BLEP

@ASG,T/S RS0.,BC.RS0.92.RS0 APPENDIX H. CASE 4.

@TEST TNE/1/53

@JUMP L3
INTERVENING STATEMENTS SKIPPED

@L3:FREE DATA1.

@FREE 14
```

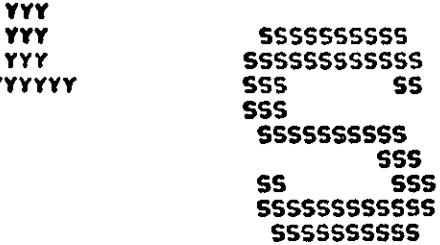
NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
UNIVAC 1110/EXEC 8



TRASYS II







PROCESSOR EXECUTION

VERSION.MODIFICATION ... UL2E6
MODIFICATION DATE 061979

DATE OF RUN 062878
TIME OF RUN 205915
JOB NUMBER RVMH04

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
PROCESSING OPERATIONS DATA

SEQUENCE	NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS----------
1	1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	5	LIDINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT LID
6	101	MESSR	1.00000	1.000	1.000	RECTANGLE	TOP	PRIMARY MESS NODE, RIGHT SIDE

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER = 1)

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	.1-05	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
*FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CH PRINT	(YES,NO,FF,CH,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	CORR	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

* -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

SEQUENCE	NODE	AREA	ALPH	EMISS
1	1	1.00000	.900	.900
2	2	1.00000	.900	.900
3	3	1.00000	.900	.900
4	4	1.00000	.900	.900
5	5	1.00000	.900	.900
6	101	1.00000	1.000	1.000

NUMBER OF NODES = 6 NUMBER OF SURFACES = 6

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
1	2	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.109	36	1
1	3	CAL	.200672	.200672	.200672	.200672	.200672	1.000000	1.000000	.066	36	1
1	4	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.064	36	1
1	5	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.067	36	1
1	101	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.065	36	1
1	FF SUM = 1.0000		ROW CP TIME = .437									
	FORM FACTOR RESTART (RSO) RECORD = 21											
2	3	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.065	36	1
2	4	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.064	36	1
2	5	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.064	36	1
2	101	CAL	.200672	.200672	.200672	.200672	.200672	1.000000	1.000000	.067	36	1
2	FF SUM = 1.0000		ROW CP TIME = .311									
	FORM FACTOR RESTART (RSO) RECORD = 22											
3	4	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.066	36	1
3	5	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.066	36	1
3	101	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.065	36	1
3	FF SUM = 1.0000		ROW CP TIME = .232									
	FORM FACTOR RESTART (RSO) RECORD = 23											
4	5	CAL	.200672	.200672	.200672	.200672	.200672	1.000000	1.000000	.062	36	1
4	101	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.062	36	1
4	FF SUM = 1.0000		ROW CP TIME = .151									
	FORM FACTOR RESTART (RSO) RECORD = 24											

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/OBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
5	101	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.064	36	1

5 FF SUM = 1.0000 ROW CP TIME = .128
FORM FACTOR RESTART (RSO) RECORD = 25

101 FF SUM = 1.0000 ROW CP TIME = .009
FORM FACTOR RESTART (RSO) RECORD = 26

FF FORM FACTORS FOR CONFIGURATION ENCL1 HAVE BEEN STORED ON RSO.
LAST RESTART RECORD WRITTEN = 26

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM
1- 1.0000	2- 1.0000	3- 1.0000	4- 1.0000	5- 1.0000	101- 1.0000

TOTAL TIME FOR FORM FACTOR SEGMENT 1.640

TOTAL TIME SINCE START OF RUN 35.717

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RGCAL
PROCESSING OPERATIONS DATA

NODE DATA--

NODE	AREA	ALPH	EMISS	TRAN(SOL)	TRAN(IR)	SPECULAR REFL(SOL)	SPECULAR REFL(IR)
1	1.00000	.900+00	.500+00	.000	.000	.000	.000
2	1.00000	.900+00	.500+00	.000	.000	.000	.000
3	1.00000	.900+00	.500+00	.000	.000	.000	.000
4	1.00000	.900+00	.500+00	.000	.000	.000	.000
5	1.00000	.900+00	.500+00	.000	.000	.000	.000
101	1.00000	.100+01	.100+01	.000	.000	.000	.000

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -TRASYS- FOLLOWING MODIFICATION(S). (ACCESS NUMBER = 2)

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBNBND	IR	BOTH	WAVEBAND DEFINITION PARAMETER	(2HIR,3HSOL,4HBOTH)

* * * *

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	NO	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	32767	32767	SPACE NODE ID NUMBER	N/A
SIGMA	.17-08	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	.7+00	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	.990	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	0	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GSCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY	SECONDARY
101	111

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADKS) CARDS

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED AND/OR BCDOU RADKS -	-	1.	1.	2.	.12969-09$
PUNCHED AND/OR BCDOU RADKS -	-	2.	1.	3.	.13003-09$
PUNCHED AND/OR BCDOU RADKS -	-	3.	1.	4.	.12974-09$
PUNCHED AND/OR BCDOU RADKS -	-	4.	1.	5.	.12974-09$
PUNCHED AND/OR BCDOU RADKS -	-	5.	-1.	101.	.28540-09$
PUNCHED AND/OR BCDOU RADKS -	-	6.	-111.	1.	.28540-09$
PUNCHED AND/OR BCDOU RADKS -	-	7.	2.	3.	.12969-09$
PUNCHED AND/OR BCDOU RADKS -	-	8.	2.	4.	.12969-09$
PUNCHED AND/OR BCDOU RADKS -	-	9.	2.	5.	.12969-09$
PUNCHED AND/OR BCDOU RADKS -	-	10.	-2.	101.	.28594-09$
PUNCHED AND/OR BCDOU RADKS -	-	11.	-111.	2.	.28594-09$
PUNCHED AND/OR BCDOU RADKS -	-	12.	3.	4.	.12974-09$
PUNCHED AND/OR BCDOU RADKS -	-	13.	3.	5.	.12974-09$
PUNCHED AND/OR BCDOU RADKS -	-	14.	-3.	101.	.28540-09$
PUNCHED AND/OR BCDOU RADKS -	-	15.	-111.	3.	.28540-09$
PUNCHED AND/OR BCDOU RADKS -	-	16.	4.	5.	.13003-09$
PUNCHED AND/OR BCDOU RADKS -	-	17.	-4.	101.	.28540-09$
PUNCHED AND/OR BCDOU RADKS -	-	18.	-111.	4.	.28540-09$
PUNCHED AND/OR BCDOU RADKS -	-	19.	-5.	101.	.28540-09$
PUNCHED AND/OR BCDOU RADKS -	-	20.	-111.	5.	.28540-09$
PUNCHED AND/OR BCDOU RADKS -	-	21.	-101.	111.	.17868-09$

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE BEFORE RKMIN SCREENING

1 -	.10000+01	2 -	.10000+01	3 -	.10000+01	4 -	.10000+01	5 -	.10000+01	-101 -	.93767+00

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE AFTER RKMIN SCREENING

1 - .10000+01 2 - .10000+01 3 - .10000+01 4 - .10000+01 5 - .10000+01 -101 - .93767+00

MODEL=SAMPLE CONFIG=ENCL1 STEP=-1 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

THE INPUT SIGNIFICANT RADIATION FRACTION = .700

THE NUMBER OF CONDUCTORS INPUT = 21
THE NUMBER OF CONDUCTORS OUTPUT = 21
WHICH IS A .0 PERCENT REDUCTION IN THE NUMBER OF CONDUCTORS.

100.0 PERCENT OF THE TOTAL EMISSIVE POWER IS EXACTLY COUPLED.

TOTAL TIME TO COMPUTE AND CONDENSE RADKS = .51

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
PROCESSING OPERATIONS DATA

SEQUENCE	NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS----------
1	11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	15	LIDINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER LEFT LID
6	111	MESSL	1.00000	1.000	1.000	RECTANGLE	BOTTOM	PRIMARY MESS NODE, LEFT SIDE

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER = 3)

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	.1-05	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
*FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CM PRINT	(YES,NO,FF,CM,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCMB	NO	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

* -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

SEQUENCE	NODE	AREA	ALPH	EMISS
1	11	1.00000	.900	.900
2	12	1.00000	.900	.900
3	13	1.00000	.900	.900
4	14	1.00000	.900	.900
5	15	1.00000	.900	.900
6	111	1.00000	1.000	1.000

NUMBER OF NODES = 6 NUMBER OF SURFACES = 6

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
11	12	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.116	36	1
11	13	CAL	.200672	.200672	.200672	.200672	.200672	1.000000	1.000000	.065	36	1
11	14	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.070	36	1
11	15	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.072	36	1
11	111	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.070	36	1
11	FF SUM = 1.0000		ROW CP TIME =		.464							
	FORM FACTOR RESTART (RSO) RECORD =		58									
12	13	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.071	36	1
12	14	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.071	36	1
12	15	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.070	36	1
12	111	CAL	.200672	.200672	.200672	.200672	.200672	1.000000	1.000000	.071	36	1
12	FF SUM = 1.0000		ROW CP TIME =		.330							
	FORM FACTOR RESTART (RSO) RECORD =		59									
13	14	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.069	36	1
13	15	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.070	36	1
13	111	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.072	36	1
13	FF SUM = 1.0000		ROW CP TIME =		.251							
	FORM FACTOR RESTART (RSO) RECORD =		60									
14	15	CAL	.200672	.200672	.200672	.200672	.200672	1.000000	1.000000	.066	36	1
14	111	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.066	36	1
14	FF SUM = 1.0000		ROW CP TIME =		.160							
	FORM FACTOR RESTART (RSO) RECORD =		61									

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J WAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
15	111	CAL	.199837	.199837	.199837	.199837	.199837	1.000000	1.000000	.063	36	1

15 FF SUM = 1.0000 ROW CP TIME = .127
FORM FACTOR RESTART (RSO) RECORD = 62

111 FF SUM = 1.0000 ROW CP TIME = .009
FORM FACTOR RESTART (RSO) RECORD = 63

FF FORM FACTORS FOR CONFIGURATION ENCL2 HAVE BEEN STORED ON RSO.
LAST RESTART RECORD WRITTEN = 63

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GSCAL/RCCAL
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM
11- 1.0000	12- 1.0000	13- 1.0000	14- 1.0000	15- 1.0000	111- 1.0000

TOTAL TIME FOR FORM FACTOR SEGMENT 1.731

TOTAL TIME SINCE START OF RUN 38.778

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
PROCESSING OPERATIONS DATA

NODE DATA--

NODE	AREA	ALPH	EMISS	TRAN(SOL)	TRAN(IR)	SPECULAR REFL(SOL)	SPECULAR REFL(IR)
11	1.00000	.900+00	.500+00	.000	.000	.000	.000
12	1.00000	.900+00	.500+00	.000	.000	.000	.000
13	1.00000	.900+00	.500+00	.000	.000	.000	.000
14	1.00000	.900+00	.500+00	.000	.000	.000	.000
15	1.00000	.900+00	.500+00	.000	.000	.000	.000
111	1.00000	.100+01	.100+01	.000	.000	.000	.000

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -TRASYS- FOLLOWING MODIFICATION(S). (ACCESS NUMBER = 4)

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBWBND	IR	BOTH	WAVEBAND DEFINITION PARAMETER	(2HIR,3HSOL,4HBOTH)

IR GRAY BODIES FOR CONFIGURATION ENCL2 HAVE BEEN COMPUTED AND STORED ON RSO.
LAST RESTART RECORD WRITTEN = 81

TOTAL TIME TO COMPUTE GRAY BODIES .22

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE/	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	NO	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	32767	32767	SPACE NODE ID NUMBER	N/A
SIGMA	.17-08	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	.5+00	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	1.00	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	555	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY	SECONDARY
111	101

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADKS) CARDS

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

```
                      ****        11.        11.    .1713000-08*    .3031613-01
PUNCHED AND/OR BCDOU RADKS -          -    1.   11.    13.    .13003-09$
PUNCHED AND/OR BCDOU RADKS -          -    2.  -11.   111.    .28540-09$
PUNCHED AND/OR BCDOU RADKS -          -    3. -101.    11.    .28540-09$
                                    11.        12.    .1713000-08*    .7570816-01
                                    11.        14.    .1713000-08*    .7573692-01
                                    11.        15.    .1713000-08*    .7573692-01
                                   ----------------------
PUNCHED AND/OR BCDOU RADKS -          -    4.   11.  555.    .38916-09$

                      ****        12.        12.    .1713000-08*    .3025855-01
PUNCHED AND/OR BCDOU RADKS -          -    5.   12.   15.    .12969-09$
PUNCHED AND/OR BCDOU RADKS -          -    6.  -12.   111.    .28594-09$
PUNCHED AND/OR BCDOU RADKS -          -    7. -101.   12.    .28594-09$
                                    12.        11.    .1713000-08*    .7570816-01
                                    12.        13.    .1713000-08*    .7570816-01
                                    12.        14.    .1713000-08*    .7570815-01
                                   ----------------------
PUNCHED AND/OR BCDOU RADKS -          -    8.   12.  555.    .38906-09$

                      ****        13.        13.    .1713000-08*    .3031613-01
PUNCHED AND/OR BCDOU RADKS -          -    9.  -13.   111.    .28540-09$
PUNCHED AND/OR BCDOU RADKS -          -   10. -101.    13.    .28540-09$
                                    13.        12.    .1713000-08*    .7570816-01
                                    13.        14.    .1713000-08*    .7573692-01
                                    13.        15.    .1713000-08*    .7573692-01
                                   ----------------------
PUNCHED AND/OR BCDOU RADKS -          -   11.   13.  555.    .38916-09$

                      ****        14.        14.    .1713000-08*    .3031613-01
PUNCHED AND/OR BCDOU RADKS -          -   12.   14.   15.    .13003-09$
PUNCHED AND/OR BCDOU RADKS -          -   13.  -14.   111.    .28540-09$
```

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADK) CARDS

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

```
PUNCHED AND/OR BCDOU RADKS -          -   14, -101,   14,   .28540-09$
                                    14,      11,    .1713000-08*    .7573692-01
                                    14,      12,    .1713000-08*    .7570815-01
                                    14,      13,    .1713000-08*    .7573692-01
                                   ----------------------
PUNCHED AND/OR BCDOU RADKS -          -   15,   14,  555,   .38916-09$

                             ****   15,      15,    .1713000-08*    .3031614-01
PUNCHED AND/OR BCDOU RADKS -          -   16,  -15,  111,   .28540-09$
PUNCHED AND/OR BCDOU RADKS -          -   17, -101,   15,   .28540-09$
                                    15,      11,    .1713000-08*    .7573692-01
                                    15,      13,    .1713000-08*    .7573692-01
                                   ----------------------
PUNCHED AND/OR BCDOU RADKS -          -   18,   15,  555,   .25947-09$

PUNCHED AND/OR BCDOU RADKS -          -   19, -111,  101,   .17868-09$
```

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE BEFORE RKMIN SCREENING

11 -	.10000+01	12 -	.10000+01	13 -	.10000+01	14 -	.10000+01	15 -	.10000+01	-111 -	.93767+00

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE AFTER RKMIN SCREENING

11 -	.10000+01	12 -	.10000+01	13 -	.10000+01	14 -	.10000+01	15 -	.10000+01	-111 -	.93767+00

MODEL=SAMPLE CONFIG=ENCL2 STEP=-2 SAMPLE CASE 4 - FFCAL/GBCAL/RCCAL
RADIATION CONDUCTOR GENERATION LINK.

THE INPUT SIGNIFICANT RADIATION FRACTION = .500

THE NUMBER OF CONDUCTORS INPUT = 21
THE NUMBER OF CONDUCTORS OUTPUT = 19
WHICH IS A 9.5 PERCENT REDUCTION IN THE NUMBER OF CONDUCTORS.

69.7 PERCENT OF THE TOTAL EMISSIVE POWER IS EXACTLY COUPLED.

TOTAL TIME TO COMPUTE AND CONDENSE RADKS = .69

NORMAL TERMINATION BY PROCESSOR

@PMD,PLEB

@BRKPT PRINT$

SAMPLE CASE 5

```
@ED,R VOOTB.CASES
FILE IN FIELD 1 DISABLED--ACCEPTED
FILE IN FIELD 1 IN USE BY ANOTHER RUN
READ-ONLY MODE
CASE UPPER ASSUMED
ED 14.02-08/28-01:48-(0.)
EDIT
     1:@RUN,R/R RVHH05,3240-F261-C,ES3-N03711.09.150                NO DECK VOOT
    10:@ASG,A ES3-TRASYS*TRASYS.
    11:@ADD ES3-TRASYS*TRASYS.STARTH
    12:@SETC 0100
    13:@ADD PREPRO
    14:HEADER OPTIONS DATA
    15:TITLE  SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
    16:       MODEL       = SAMPLE
    17:       RSO         = RSTSAM5
    18:HEADER SURFACE DATA
    19:C
    20:C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5
    21:C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT
    22:C-----CASES.
    23:C
    24:BCS    BOXINR
    25:S      SURFN       = 1
    26:       TYPE        = RECT
    27:       ACTIVE      = BOTTOM
    28:       PROP        = 0.9,0.9
    29:       P1          = 1.0, 0.0, 1.0
    30:       P2          = 1.0, 0.0, 0.0
    31:       P3          = 1.0, 1.0, 0.0
    32:       COM         = * INNER RIGHT FRONT *
    33:S      SURFN       = 2
    34:       TYPE        = RECT
    35:       ACTIVE      = BOTTOM
    36:       PROP        = 0.9,0.9
    37:       P1          = 1.0, 1.0, 1.0
    38:       P2          = 1.0, 1.0, 0.0
    39:       P3          = 0.0, 1.0, 0.0
    40:       COM         = * INNER RIGHT SIDE *
    41:S      SURFN       = 3
    42:       TYPE        = RECT
    43:       ACTIVE      = TOP
    44:       PROP        = 0.9,0.9
    45:       P1          = 0.0, 0.0, 1.0
    46:       P2          = 0.0, 0.0, 0.0
    47:       P3          = 0.0, 1.0, 0.0
    48:       COM         = * INNER RIGHT BACK *
    49:S      SURFN       = 4
    50:       TYPE        = RECT
    51:       ACTIVE      = TOP
    52:       PROP        = 0.9,0.9
    53:       P1          = 1.0, 1.0, 0.0
    54:       COM         = * INNER RIGHT BOTTOM *
    55:BCS    BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000
    56:C
    57:C-----THE FOREGOING CARD IMAGES BCS BOXINR IN REFERENCE PLANE 1000
    58:C-----TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX HAS INPUT IN
```

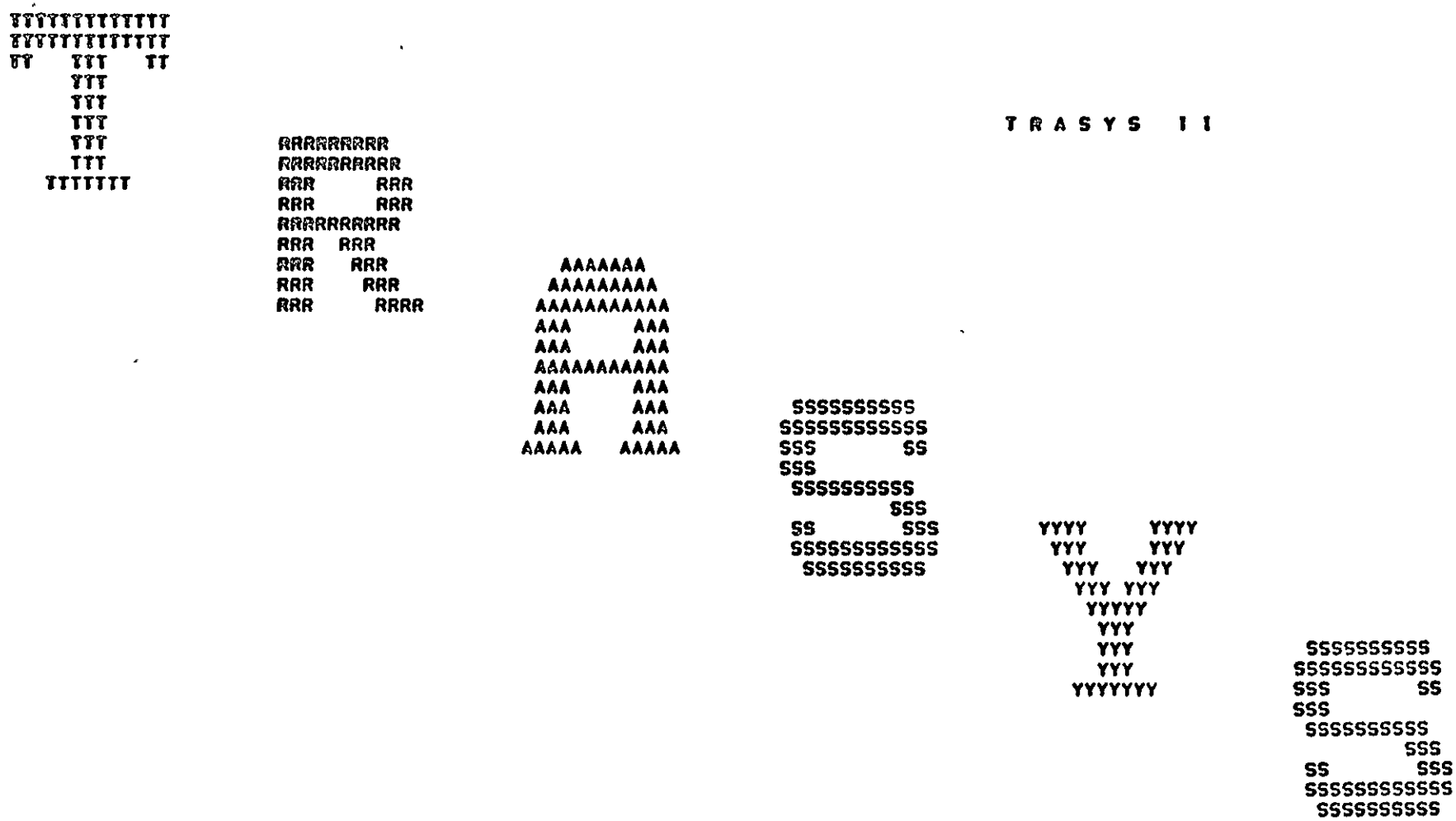
```
 59:C------THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW -
 60:C------THE USE OF 'MESS' AND 'ERN' NODES.
 61:C
 62:R       REFNO        = 1000
 63:        P1           = 1.0, 0.0, 1.0
 64:        P2           = 1.0, 0.0, 0.0
 65:        P3           = 0.0, 0.0, 0.0
 66:        COM          = ' IMAGING PLANE '
 67:BCS     LIDINR
 68:S       SURFN        = 5
 69:        TYPE         = RECT
 70:        ACTIVE       = BOTTOM
 71:        PROP         = 0.8,0.8
 72:        P1           = 1.0, 1.0, 0.0
 73:        COM          = ' INNER RIGHT LID '
 74:S       SURFN        = 15
 75:        IMAGSF       = 5
 76:        IREFSF       = 1000
 77:        COM          = ' INNER LEFT LID '
 78:BCS     BOXOUT
 79:S       SURFN        = 21
 80:        TYPE         = BOXS
 81:        ACTIVE       = OUT
 82:        SHADE        = NO
 83:        PROP         = 0.2,0.9
 84:        P1           = 1.01,-1.01, 1.01
 85:        P2           = 1.01, 1.01, 1.01
 86:        P3           =-0.01, 1.01, 1.01
 87:        P4           =-0.01, 1.01,-0.01
 88:        COM          = ' OUTER SURFACES '
 89:BCS     LIDOUT
 90:S       SURFN        = 28
 91:        TYPE         = RECT
 92:        ACTIVE       = TOP
 93:        SHADE        = NO
 94:        PROP         = 0.2,0.9
 95:        P1           = 1.01,-1.01, 0.01
 96:        P2           = 1.01, 1.01, 0.01
 97:        P3           =-0.01, 1.01, 0.01
 98:        COM          = ' OUTER SURFACE OF LID '
 99:C
100:C------THE NEXT TWO BCSIS (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE
101:C------CASE 4 ONLY.
102:C
103:BCS     MESSR
104:S       SURFN        = 101
105:        TYPE         = RECT
106:        ACTIVE       = TOP
107:        PROP         = 1.0,1.0
108:        P1           = 1.0, 0.0, 1.0
109:        P2           = 1.0, 0.0, 0.0
110:        P3           = 0.0, 0.0, 0.0
111:        COM          = ' PRIMARY MESS NODE, RIGHT SIDE '
112:BCS     MESSL
113:S       SURFN        = 111
114:        TYPE         = RECT
115:        ACTIVE       = BOTTOM
```

```
116:        PROP        = 1.0,1.0
117:        P1          = 1.0, 0.0, 1.0
118:        P2          = 1.0, 0.0, 0.0
119:        P3          = 0.0, 0.0, 0.0
120:        COM         = ' PRIMARY MESS NODE, LEFT SIDE '
121:C
122:C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.
123:C
124:BCS     LIDSP
125:S       SURFN       = 200
126:        TYPE        = RECT
127:        ACTIVE      = BOTTOM
128:        PROP        = 0.1,0.1
129:        SPRI        = 0.8
130:        SPRS        = 0.8
131:        P1          = 1.0,-1.0, 0.0
132:        P2          = 1.0, 1.0, 0.0
133:        P3          = 0.0, 1.0, 0.0
134:        COM         = ' SPECULAR LID '
135:HEADER BCS DATA
136:BCS     BOXINR
137:BCS     BOXINL
138:BCS     LIDINR ,0.,0.,1.,0.,-45.,0.
139:BCS     BOXOUT
140:BCS     LIDOUT ,0.,0.,1.,0.,-45.,0.
141:BCS     MESSR
142:BCS     MESSL
143:BCS     LIDSP  ,0.,0.,1.,0.,-45.,0.
144:HEADER FORM FACTOR DATA
145:C
146:C-----ENTER KNOWN ZERO FORM FACTORS AND EQUIVALENT FORM FACTORS FOR
147:C-----CASE5.
148:C
149:FIG     CASE1
150:NODEA   1,2,3,4,11,12,13,14,200,21,22,23,24,25,26,END
151:BOTH    21,ZERO
152:        22,ZERO
153:        23,ZERO
154:        24,ZERO
155:        25,ZERO
156:        26,ZERO
157:        1,1,0.
158:        11,12,1,2
159:        11,13,1,3
160:        11,14,1,4
161:        11,200,1,200
162:        1,11,0.
163:        11,2,1,12
164:        11,3,1,13
165:        11,4,1,14
166:        2,2,0.
167:        2,3,1,2
168:        2,4,1,4
169:        12,13,2,3
170:        12,14,2,4
171:        12,200,2,200
172:        12,3,2,13
```

```
173:        12,4,2,14
174:        3,3,0.
175:        3,4,1,4
176:        13,14,3,4
177:        13,200,3,200
178:        3,13,0.
179:        13,4,3,14
180:        4,4,0.
181:        14,200,4,200
182:        4,14,0.
183:        200,200,0.
184:HEADER CORRESPONDENCE DATA
185:C
186:C-----ENTER CORRESPONDENCE DATA FOR CASE 2
187:C
188:FIG     CASE2
189:        1             = 1,11,22
190:        2             = 2,25
191:        3             = 3,13,24
192:        4             = 4,14,21
193:        5             = 5,15,26
194:        12            = 12,23
195:C
196:C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS
197:C
198:FIG     CASE3,FF
199:        1             = 1,11,22
200:        2             = 2,25
201:        3             = 3,13,24
202:        4             = 4,14,21
203:        5             = 5,15,26
204:        12            = 12,23
205:HEADER OPERATIONS DATA
206:C
207:C-----BUILD THE CASE 5 CONFIGURATION
208:C
209:BUILD   CASE5,BOXINR,BOXINL,LIDSP,BOXOUT,LIDOUT
210:C
211:C-----CALCULATE THE FORM FACTOR MATRIX.
212:C
213:L       FFCAL
214:C
215:C-----CALCULATE IMAGE FACTORS
216:C
217:        CALL RBDATA(0,0,0,0,0)
218:L       RBCAL
219:C
220:C-----CALCULATE THE GRAY BODY MATRIX USING IMAGE FACTORS.
221:C
222:        CALL GBDATA(BOTH,0,RB)
223:L       GBCAL
224:C
225:C-----CALCULATE AND PUNCH RADIATION CONDUCTORS.
226:C
227:        CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)
228:L       RKCAL
229:C
```

```
230:C-----DEFINE ORBIT AND VEHICLE ORIENTATION (CIRCULAR-PLANET-ORIENTED)
231:C
232:       CALL ORBIT2(EAR,0.,60.,0.,0.,0.,100.*6080.,100.*6080.)
233:       CALL ORIENT(4HPLAN,1.,2.,3.,300.,270.,0.)
234:C
235:C-----SET *AQPRNT* TO PRINT THE COMPONENT VALUES OF ABSORBED Q'S.
236:C
237:       AQPRNT        =YES
238:C
239:C-----CALCULATE INCIDENT FLUXES PLUS SPECULAR REFLECTIONS.
240:C
241:ORBGEN CIRP,0.,180.,2.,DI
242:STEP   10010
243:       CALL DRDATA(10000,0)
244:L      DRCAL
245:       CALL AQDATA(0,0,0,0,0)
246:L      AQCAL
247:C
248:STEP   10011
249:       CALL DRDATA(10001,0)
250:L      DRCAL
251:       CALL AQDATA(0,0,0,0,0)
252:L      AQCAL
253:C
254:STEP   10012
255:       CALL DRDATA(10002,0)
256:L      DRCAL
257:       CALL AQDATA(0,0,0,0,0)
258:L      AQCAL
259:C
260:STEP   10013
261:       CALL DRDATA(10003,0)
262:L      DRCAL
263:       CALL AQDATA(0,0,0,0,0)
264:L      AQCAL
265:C
266:STEP   10014
267:       CALL DRDATA(10004,0)
268:L      DRCAL
269:       CALL AQDATA(0,0,0,0,0)
270:L      AQCAL
271:C
272:       CALL QODATA(3HALL,0,0,0,0,0,0,0)
273:L      QOCAL
274:END OF DATA
275:$PMD,$LEP
276:$ASG,T/S RSO.,8C,RSO,92,RSO APPENDIX H, CASE 5.
277:$ADD PROCSS
285:$FIN
NO CORRECTIONS APPLIED.


$ASG,A ES3-TRASYS*TRASYS.
FAC WARNING       040000100200
```

NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
UNIVAC 1110/EXEC 8



PRE-PROCESSOR EXECUTION

VERSION.MODIFICATION ... UC2E3
MODIFICATION DATE 052678

DATE OF RUN 062878
TIME OF RUN 014922
JOB NUMBER RVMH05

```
DATE     082878 TIME     014924       THERMAL RADIATION ANALYSIS SYSTEM (TRASYS)  UNIVAC/EXC 8 VERSION      PAGE     1

MODEL = N/A
OPTION AND TITLE DATA BLOCKS

CARD ORGIN        12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT             HEADER OPTIONS DATA
INPUT             TITLE  SAMPLE CASE 5 - FFCAL/RQCAL/QBCAL/RKCAL/ORBGEN/ORCAL/AQCAL/QQCAL
INPUT                    MODEL        = SAMPLE
INPUT                    RSO          = RSTSAM5
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
TRASYS INFORMATION TO USER

```
**********************************************************
*                                                        *
*   A T T E N T I O N   T R A S Y S   U S E R S          *
*                                                        *
**********************************************************
```

THIS SECTION OF THE TRASYS PRINTOUT WAS DEVISED TO INFORM THE TRASYS USERS OF THE STATUS OF THE TRASYS PROGRAM WITHOUT HAVING TO PRINTOUT ALL THE STATUS INFORMATION ON EVERY RUN. TO OBTAIN ADDITIONAL INFORMATION ON HOW TO USE THIS SECTION OF THE TRASYS PRINTOUT, PLACE A (INFO=INFO) IN THE OPTIONS DATA BLOCK.

FOR TRASYS ASSISTANCE AND/OR POSSIBLE TRASYS PROGRAM PROBLEMS, PLEASE CONTACT BOB VOGT AT JSC-2328.

NEWRL 08/29/77 DOCUMENTATION ADDITION

THE TRASYS -N- VERSION HAS BEEN UPDATED TO THE UC2E2 AND UL2E4 LEVEL.
SEE LATEST USERS MANUAL FOR INFORMATION ON USER-CALLED SUBROUTINE ARGUMENT CHANGES AND NEW CAPABILITIES.

END OF TRASYS INFORMATION FILE

++NOTE++ DATA ORIGINATION FROM INPUT FILE, NO -RSI- SOURCE EDITING

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
MODEL HISTORY

MODEL NAME ..... SAMPLE

MODEL TITLE ..... SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL

MOD LABEL	RUN JOB NUMBER	RUN DATA	RUN TIME	RSI TAPE	RSO TAPE	RTI TAPE	RTO TAPE	CMERG TAPE	EMERG TAPE	BCDOU TAPE	TRAJ TAPE	USER1 TAPE	USER2 TAPE
AA	RVMM05	062878	014924		RSTSAM								

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GSCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
SOURCE DATA EDIT DIRECTIVES

CARD ORGIN 12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QQCAL
SURFACE DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL

INPUT           HEADER SURFACE DATA                                                                    1              AA
INPUT           C                                                                                      2              AA
INPUT           C-----THIS SURFACE DATA BLOCK IS USED IN SAMPLE CASES 1 THROUGH 5                       3              AA
INPUT           C-----WITH VARIOUS PORTIONS OF IT BEING ACTIVATED FOR THE DIFFERENT                     4              AA
INPUT           C-----CASES.                                                                           5              AA
INPUT           C                                                                                      6              AA
INPUT           BCS    BOXINR                                                                          7              AA
INPUT           S      SURFN       = 1                                                                8              AA
INPUT                  TYPE        = RECT                                                             9              AA
INPUT                  ACTIVE      = BOTTOM                                                           10             AA
INPUT                  PROP        = 0.9,0.9                                                          11             AA
INPUT                  P1          = 1.0, 0.0, 1.0                                                    12             AA
INPUT                  P2          = 1.0, 0.0, 0.0                                                    13             AA
INPUT                  P3          = 1.0, 1.0, 0.0                                                    14             AA
INPUT                  COM         = * INNER RIGHT FRONT *                                            15             AA
INPUT           S      SURFN       = 2                                                                16             AA
INPUT                  TYPE        = RECT                                                             17             AA
INPUT                  ACTIVE      = BOTTOM                                                           18             AA
INPUT                  PROP        = 0.9,0.9                                                          19             AA
INPUT                  P1          = 1.0, 1.0, 1.0                                                    20             AA
INPUT                  P2          = 1.0, 1.0, 0.0                                                    21             AA
INPUT                  P3          = 0.0, 1.0, 0.0                                                    22             AA
INPUT                  COM         = * INNER RIGHT SIDE *                                             23             AA
INPUT           S      SURFN       = 3                                                                24             AA
INPUT                  TYPE        = RECT                                                             25             AA
INPUT                  ACTIVE      = TOP                                                              26             AA
INPUT                  PROP        = 0.9,0.9                                                          27             AA
INPUT                  P1          = 0.0, 0.0, 1.0                                                    28             AA
INPUT                  P2          = 0.0, 0.0, 0.0                                                    29             AA
INPUT                  P3          = 0.0, 1.0, 0.0                                                    30             AA
INPUT                  COM         = * INNER RIGHT BACK *                                             31             AA
INPUT           S      SURFN       = 4                                                                32             AA
INPUT                  TYPE        = RECT                                                             33             AA
INPUT                  ACTIVE      = TOP                                                              34             AA
INPUT                  PROP        = 0.9,0.9                                                          35             AA
INPUT                  P1          = 1.0, 1.0, 0.0                                                    36             AA
INPUT                  COM         = * INNER RIGHT BOTTOM *                                           37             AA
INPUT           BCS    BOXINL,IMGBCS=BOXINR,NINC=10,IREFSF=1000                                       38             AA
INPUT           C                                                                                      39             AA
INPUT           C-----THE FOREGOING CARD IMACES BCS BOXINR IN REFERENCE PLANE 1000                      40             AA
INPUT           C-----TO CREATE BCS BOXINL.  THE INTERIOR OF THE BOX WAS INPUT IN                       41             AA
INPUT           C-----THIS MANNER TO FACILITATE THE INPUT OF SAMPLE CASE 4 TO SHOW                      42             AA
INPUT           C-----THE USE OF 'MESS' AND 'ERN' NODES.                                               43             AA
INPUT           C                                                                                      44             AA

                IMAGING SURFACE (    1) BCS (BOXINR), GENERATING SURFACE (   11) BCS (BOXINL)
                IMAGING SURFACE (    2) BCS (BOXINR), GENERATING SURFACE (   12) BCS (BOXINL)
                IMAGING SURFACE (    3) BCS (BOXINR), GENERATING SURFACE (   13) BCS (BOXINL)
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GDCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
SURFACE DATA INPUT BLOCK

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

                 IMAGING SURFACE (    4) BCS (BOXINR), GENERATING SURFACE (   14) BCS (BOXINL)
INPUT            R      REFNO       = 1000                                                        45                  AA
INPUT                   P1          = 1.0, 0.0, 1.0                                               46                  AA
INPUT                   P2          = 1.0, 0.0, 0.0                                               47                  AA
INPUT                   P3          = 0.0, 0.0, 0.0                                               48                  AA
INPUT                   COM         = * IMAGING PLANE *                                           49                  AA
INPUT            BCS    LIDINR                                                                    50                  AA
INPUT            S      SURFN       = 5                                                           51                  AA
INPUT                   TYPE        = RECT                                                        52                  AA
INPUT                   ACTIVE      = BOTTOM                                                      53                  AA
INPUT                   PROP        = 0.9,0.9                                                     54                  AA
INPUT                   P1          = 1.0, 1.0, 0.0                                               55                  AA
INPUT                   COM         = * INNER RIGHT LID *                                         56                  AA
INPUT            S      SURFN       = 15                                                          57                  AA
INPUT                   IMAGSF      = 5                                                           58                  AA
INPUT                   IREFSF      = 1000                                                        59                  AA
INPUT                   COM         = * INNER LEFT LID *                                          60                  AA
INPUT            BCS    BOXOUT                                                                    61                  AA
INPUT            S      SURFN       = 21                                                          62                  AA
INPUT                   TYPE        = BOX3                                                        63                  AA
INPUT                   ACTIVE      = OUT                                                         64                  AA
INPUT                   SHADE       = NO                                                          65                  AA
INPUT                   PROP        = 0.2,0.9                                                     66                  AA
INPUT                   P1          = 1.01,-1.01, 1.01                                            67                  AA
INPUT                   P2          = 1.01, 1.01, 1.01                                            68                  AA
INPUT                   P3          =-0.01, 1.01, 1.01                                            69                  AA
INPUT                   P4          =-0.01, 1.01,-0.01                                            70                  AA
INPUT                   COM         = * OUTER SURFACES *                                          71                  AA
INPUT            BCS    LIDOUT                                                                    72                  AA
INPUT            S      SURFN       = 28                                                          73                  AA
INPUT                   TYPE        = RECT                                                        74                  AA
INPUT                   ACTIVE      = TOP                                                         75                  AA
INPUT                   SHADE       = NO                                                          76                  AA
INPUT                   PROP        = 0.2,0.9                                                     77                  AA
INPUT                   P1          = 1.01,-1.01, 0.01                                            78                  AA
INPUT                   P2          = 1.01, 1.01, 0.01                                            79                  AA
INPUT                   P3          =-0.01, 1.01, 0.01                                            80                  AA
INPUT                   COM         = * OUTER SURFACE OF LID *                                    81                  AA
INPUT            C                                                                                82                  AA
INPUT            C-----THE NEXT TWO BCSIS (MESSR AND MESSL) ARE ACTIVATED IN SAMPLE               83                  AA
INPUT            C-----CASE 4 ONLY.                                                               84                  AA
INPUT            C                                                                                85                  AA
INPUT            BCS    MESSR                                                                     86                  AA
INPUT            S      SURFN       = 101                                                         87                  AA
INPUT                   TYPE        = RECT                                                        88                  AA
INPUT                   ACTIVE      = TOP                                                         89                  AA
INPUT                   PROP        = 1.0,1.0                                                     90                  AA
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
SURFACE DATA INPUT BLOCK

```
CARD ORGIN       12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT                    P1          = 1.0, 0.0, 1.0                                                  91                 AA
INPUT                    P2          = 1.0, 0.0, 0.0                                                  92                 AA
INPUT                    P3          = 0.0, 0.0, 0.0                                                  93                 AA
INPUT                    COM         = ' PRIMARY MESS NODE, RIGHT SIDE '                              94                 AA
INPUT              BCS   MESSL                                                                          95                 AA
INPUT              S     SURFN       = 111                                                            96                 AA
INPUT                    TYPE        = RECT                                                           97                 AA
INPUT                    ACTIVE      = BOTTOM                                                         98                 AA
INPUT                    PROP        = 1.0,1.0                                                        99                 AA
INPUT                    P1          = 1.0, 0.0, 1.0                                                 100                 AA
INPUT                    P2          = 1.0, 0.0, 0.0                                                 101                 AA
INPUT                    P3          = 0.0, 0.0, 0.0                                                 102                 AA
INPUT                    COM         = ' PRIMARY MESS NODE, LEFT SIDE '                              103                 AA
INPUT              C                                                                                  104                 AA
INPUT              C-----THE FOLLOWING BCS (LIDSP) IS ACTIVATED IN SAMPLE CASE 5 ONLY.                105                 AA
INPUT              C                                                                                  106                 AA
INPUT              BCS   LIDSP                                                                        107                 AA
INPUT              S     SURFN       = 200                                                           108                 AA
INPUT                    TYPE        = RECT                                                          109                 AA
INPUT                    ACTIVE      = BOTTOM                                                        110                 AA
INPUT                    PROP        = 0.1,0.1                                                       111                 AA
INPUT                    SPRI        = 0.8                                                           112                 AA
INPUT                    SPRS        = 0.8                                                           113                 AA
INPUT                    P1          = 1.0,-1.0, 0.0                                                 114                 AA
INPUT                    P2          = 1.0, 1.0, 0.0                                                 115                 AA
INPUT                    P3          = 0.0, 1.0, 0.0                                                 116                 AA
INPUT                    COM         = ' SPECULAR LID '                                              117                 AA
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GSCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL

BCS DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL

INPUT           HEADER BCS DATA                                                                    118              AA
INPUT           BCS    BOXINR                                                                      119              AA
INPUT           BCS    BOXIML                                                                      120              AA
INPUT           BCS    LIDINR ,0.,0.,1.,0.,-45.,0.                                                 121              AA
INPUT           BCS    BOXOUT                                                                      122              AA
INPUT           BCS    LIDOUT ,0.,0.,1.,0.,-45.,0.                                                 123              AA
INPUT           BCS    MESSR                                                                       124              AA
INPUT           BCS    MESSL                                                                       125              AA
INPUT           BCS    LIDSP  ,0.,0.,1.,0.,-45.,0.                                                 126              AA
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
FORM FACTOR DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL

INPUT           HEADER FORM FACTOR DATA                                                                    127              AA
INPUT           C                                                                                          128              AA
INPUT           C------ENTER KNOWN ZERO FORM FACTORS AND EQUIVALENT FORM FACTORS FOR                        129              AA
INPUT           C------CASE5.                                                                              130              AA
INPUT           C                                                                                          131              AA
INPUT           FIG    CASE1                                                                               132              AA
INPUT           NODEA  1,2,3,4,11,12,13,14,200,21,22,23,24,25,26,END                                       133              AA
INPUT           BOTH   21,ZERO                                                                             134              AA
INPUT                  22,ZERO                                                                             135              AA
INPUT                  23,ZERO                                                                             136              AA
INPUT                  24,ZERO                                                                             137              AA
INPUT                  25,ZERO                                                                             138              AA
INPUT                  26,ZERO                                                                             139              AA
INPUT                  1,1,0.                                                                              140              AA
INPUT                  11,12,1,2                                                                           141              AA
INPUT                  11,13,1,3                                                                           142              AA
INPUT                  11,14,1,4                                                                           143              AA
INPUT                  11,200,1,200                                                                        144              AA
INPUT                  1,11,0.                                                                             145              AA
INPUT                  11,2,1,12                                                                           146              AA
INPUT                  11,3,1,13                                                                           147              AA
INPUT                  11,4,1,14                                                                           148              AA
INPUT                  2,2,0.                                                                              149              AA
INPUT                  2,3,1,2                                                                             150              AA
INPUT                  2,4,1,4                                                                             151              AA
INPUT                  12,13,2,3                                                                           152              AA
INPUT                  12,14,2,4                                                                           153              AA
INPUT                  12,200,2,200                                                                        154              AA
INPUT                  12,3,2,13                                                                           155              AA
INPUT                  12,4,2,14                                                                           156              AA
INPUT                  3,3,0.                                                                              157              AA
INPUT                  3,4,1,4                                                                             158              AA
INPUT                  13,14,3,4                                                                           159              AA
INPUT                  13,200,3,200                                                                        160              AA
INPUT                  3,13,0.                                                                             161              AA
INPUT                  13,4,3,14                                                                           162              AA
INPUT                  4,4,0.                                                                              163              AA
INPUT                  14,200,4,200                                                                        164              AA
INPUT                  4,14,0.                                                                             165              AA
INPUT                  200,200,0.                                                                          166              AA
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL

CORRESPONDENCE DATA INPUT BLOCK

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO.  LABEL
INPUT           HEADER CORRESPONDENCE DATA                                                          167                 AA
INPUT           C                                                                                   168                 AA
INPUT           C-----ENTER CORRESPONDENCE DATA FOR CASE 2                                          169                 AA
INPUT           C                                                                                   170                 AA
INPUT           FIG    CASE2                                                                        171                 AA
INPUT                  1          = 1,11,22                                                        172                 AA
INPUT                  2          = 2,25                                                           173                 AA
INPUT                  3          = 3,13,24                                                        174                 AA
INPUT                  4          = 4,14,21                                                        175                 AA
INPUT                  5          = 5,15,26                                                        176                 AA
INPUT                  12         = 12,23                                                          177                 AA
INPUT           C                                                                                   178                 AA
INPUT           C-----ENTER CORRESPONDENCE DATA FOR CASE 3 TO COMBINE FORM FACTORS                  179                 AA
INPUT           C                                                                                   180                 AA
INPUT           FIG    CASE3,FF                                                                     181                 AA
INPUT                  1          = 1,11,22                                                        182                 AA
INPUT                  2          = 2,25                                                           183                 AA
INPUT                  3          = 3,13,24                                                        184                 AA
INPUT                  4          = 4,14,21                                                        185                 AA
INPUT                  5          = 5,15,26                                                        186                 AA
INPUT                  12         = 12,23                                                          187                 AA
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
OPERATION DATA INPUT BLOCK (PASS 1)

CARD ORIGIN	12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8	EDIT NO.	OLD EDIT NO.	LABEL
INPUT	HEADER OPERATIONS DATA	100		AA

+++++ OPERATIONS DATA BLOCK (PASS 1) COMPLETE +++++

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QQCAL
OPERATION DATA INPUT BLOCK (PASS 2)

```
CARD ORGIN      12345678 1 2345678 2 2345678 3 2345678 4 2345678 5 2345678 6 2345678 7 2345678 8 EDIT NO. OLD EDIT NO. LABEL
INPUT           C                                                                                    100              AA
INPUT           C-----BUILD THE CASE 5 CONFIGURATION                                                 190              AA
INPUT           C                                                                                    191              AA
PROG            STEP      -1                                                                           0
INPUT           BUILD  CASE5,BOXINR,BOXINL,LIDSP,BOXOUT,LIDOUT                                       192              AA
PROG                   CALL BUILDC (BOXINR,6HCASE5 )                                                  0
PROG                   CALL ADD (BOXINL)                                                              0
PROG                   CALL ADD (LIDSP )                                                              0
PROG                   CALL ADD (BOXOUT)                                                              0
PROG                   CALL ADD (LIDOUT)                                                              0
INPUT           C                                                                                    193              AA
INPUT           C-----CALCULATE THE FORM FACTOR MATRIX.                                              194              AA
INPUT           C                                                                                    195              AA
INPUT           L      FFCAL                                                                         196              AA
INPUT           C                                                                                    197              AA
INPUT           C-----CALCULATE IMAGE FACTORS                                                        198              AA
INPUT           C                                                                                    199              AA
INPUT                  CALL RBDATA(0,0,0,0,0)                                                       200              AA
INPUT           L      RBCAL                                                                         201              AA
INPUT           C                                                                                    202              AA
INPUT           C-----CALCULATE THE GRAY BODY MATRIX USING IMAGE FACTORS.                            203              AA
INPUT           C                                                                                    204              AA
INPUT                  CALL GBDATA(BOTH,0,RB)                                                       205              AA
INPUT           L      GBCAL                                                                         206              AA
INPUT           C                                                                                    207              AA
INPUT           C-----CALCULATE AND PUNCH RADIATION CONDUCTORS.                                      208              AA
INPUT           C                                                                                    209              AA
INPUT                  CALL RKDATA(0,0,0,0,SPACE,999,0,0,0,0)                                       210              AA
INPUT           L      RKCAL                                                                         211              AA
INPUT           C                                                                                    212              AA
INPUT           C-----DEFINE ORBIT AND VEHICLE ORIENTATION (CIRCULAR-PLANET-ORIENTED)                213              AA
INPUT           C                                                                                    214              AA
INPUT                  CALL ORBIT2(EAR,0.60.,0,0,0,100.*6080.,100.*6080.)                           215              AA
INPUT                  CALL ORIENT(4HPLAN,1,2,3,300.,270.,0.)                                       216              AA
INPUT           C                                                                                    217              AA
INPUT           C-----SET *AQPRNT* TO PRINT THE COMPONENT VALUES OF ABSORBED Q'S.                    218              AA
INPUT           C                                                                                    219              AA
INPUT               AQPRNT      = *YES                                                               220              AA
INPUT           C                                                                                    221              AA
INPUT           C-----CALCULATE INCIDENT FLUXES PLUS SPECULAR REFLECTIONS.                           222              AA
INPUT           C                                                                                    223              AA
PROG            C                                                                                      0
PROG            C********************  ORBIT GENERATION STARTS HERE  ********************            0
INPUT           CORBGEN CIRP,0.,180.,2,DI                                                            224              AA
PROG            C                                                                                      0
PROG            STEP  10000                                                                            0
PROG                  TRUEAN      =       .000                                                         0
PROG                  TRUANF      =    180.000                                                         0
PROG                  TRUANI      =       .000                                                         0
```

```
PROG                IAI         = 0                                          0
PROG                IAS         = 0                                          0
PROG                PLTYPE      = 6HPLSAVE                                   0
PROG                CALL DICOMP(0,0,0)                                       0
PROG          L      DICAL                                                   0
PROG                NSPFF       = 10000                                      0
PROG                PLTYPE      = 6HPLREAD                                   0
PROG                CALL AQDATA(IAI,IAS,0,0,0)                               0
PROG          C     AQCAL                                                   0
PROG          STEP  10001                                                   0
PROG                TRUEAN      =       90.000                               0
PROG                CALL DICOMP(0,0,10000)                                   0
PROG          L      DICAL                                                   0
PROG                CALL AQDATA(IAI,IAS,0,0,0)                               0
PROG          C     AQCAL                                                   0
PROG          STEP  10002                                                   0
PROG                TRUEAN      =      180.000                               0
PROG                CALL DICOMP(0,0,10000)                                   0
PROG          L      DICAL                                                   0
PROG                CALL AQDATA(IAI,IAS,0,0,0)                               0
PROG          C     AQCAL                                                   0
PROG          STEP  10003                                                   0
PROG                IF(SHADIN.LT.0.)                  GO TO 90400            0
PROG                TRUEAN      = SHADIN-0.1                                 0
PROG                IF(TRUEAN.LT.TRUANI.OR.                                  0
PROG               1    TRUEAN.GT.TRUANF)             GO TO  90000           0
PROG                CALL DICOMP(0,4HZERO,10000)                              0
PROG          L      DICAL                                                   0
PROG                CALL AQDATA(IAI,IAS,0,0,0)                               0
PROG          C     AQCAL                                                   0
PROG          90000 CONTINUE                                                0
PROG          STEP  10004                                                   0
PROG                TRUEAN      = SHADIN+0.1                                 0
PROG                IF(TRUEAN.LT.TRUANI.OR.                                  0
PROG               1    TRUEAN.GT.TRUANF)             GO TO  90100           0
PROG                CALL DICOMP(0,0,10000)                                   0
PROG          L      DICAL                                                   0
PROG                CALL AQDATA(IAI,IAS,0,0,0)                               0
PROG          C     AQCAL                                                   0
PROG          90100 CONTINUE                                                0
PROG          STEP  10005                                                   0
PROG                TRUEAN      = SHAOUT+0.1                                 0
PROG                IF(TRUEAN.LT.TRUANI.OR.                                  0
PROG               1    TRUEAN.GT.TRUANF)             GO TO  90200           0
PROG                CALL DICOMP(0,4HZERO,10000)                              0
PROG          L      DICAL                                                   0
PROG                CALL AQDATA(IAI,IAS,0,0,0)                               0
PROG          C     AQCAL                                                   0
PROG          90200 CONTINUE                                                0
PROG          STEP  10006                                                   0
PROG                TRUEAN      = SHAOUT-0.1                                 0
PROG                IF(TRUEAN.LT.TRUANI.OR.                                  0
PROG               1    TRUEAN.GT.TRUANF)             GO TO  90300           0
PROG                CALL DICOMP(0,0,10000)                                   0
PROG          L      DICAL                                                   0
PROG                CALL AQDATA(IAI,IAS,0,0,0)                               0
PROG          C     AQCAL                                                   0
```

```
PROG      90300  CONTINUE                                                    *      0
PROG      90400  CONTINUE                                                    *      0
PROG      C                                                                  *      0
PROG      C*********************  ORBIT GENERATION ENDS HERE  ***************      0
PROG      C                                                                  *      0
INPUT     STEP   10010                                                             225   AA
INPUT            CALL DRDATA(10000,0)                                             226   AA
INPUT     L      DRCAL                                                            227   AA
INPUT            CALL AQDATA(0,0,0,0,0)                                           228   AA
INPUT     L      AQCAL                                                            229   AA
INPUT     C                                                                       230   AA
INPUT     STEP   10011                                                            231   AA
INPUT            CALL DRDATA(10001,0)                                             232   AA
INPUT     L      DRCAL                                                            233   AA
INPUT            CALL AQDATA(0,0,0,0,0)                                           234   AA
INPUT     L      AQCAL                                                            235   AA
INPUT     C                                                                       236   AA
INPUT     STEP   10012                                                            237   AA
INPUT            CALL DRDATA(10002,0)                                             238   AA
INPUT     L      DRCAL                                                            239   AA
INPUT            CALL AQDATA(0,0,0,0,0)                                           240   AA
INPUT     L      AQCAL                                                            241   AA
INPUT     C                                                                       242   AA
INPUT     STEP   10013                                                            243   AA
INPUT            CALL DRDATA(10003,0)                                             244   AA
INPUT     L      DRCAL                                                            245   AA
INPUT            CALL AQDATA(0,0,0,0,0)                                           246   AA
INPUT     L      AQCAL                                                            247   AA
INPUT     C                                                                       248   AA
INPUT     STEP   10014                                                            249   AA
INPUT            CALL DRDATA(10004,0)                                             250   AA
INPUT     L      DRCAL                                                            251   AA
INPUT            CALL AQDATA(0,0,0,0,0)                                           252   AA
INPUT     L      AQCAL                                                            253   AA
INPUT     C                                                                       254   AA
INPUT            CALL QODATA(3HALL,0,0,0,0,0,0,0)                                 255   AA
INPUT     L      QOCAL                                                            256   AA
INPUT     END OF DATA                                                             257   AA
```

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
PROCESSOR CORE ALLOCATION

THE FOLLOWING IS THE PROCESSOR CORE ALLOCATION FOR THOSE SEGMENTS WHICH WILL BE LOADED IN THIS EXECUTION (APPROX.) ...

	OCTAL/DECIMAL
TRASYS (0) SEGMENT	121220/ 41616
OPERATIONS DATA (NOT KNOWN AT THIS TIME)	175000/ 64000
INITALIZATION SEGMENT	122300/ 42176
FORM FACTOR SEGMENT	136100/ 48192
DIRECT FLUX SEGMENT	150500/ 53568
GRAY BODY SEGMENT	124000/ 43008
ABSORBED Q-S SEGMENT	122500/ 42304
-QO- SEGMENT	130600/ 45440
REAL BODY SEGMENT	142600/ 50560
RADATION CONDUCTOR SEGMENT	125500/ 43840
DIRECT FLUX REAL BODY SEGMENT	126000/ 44032
GRAY BODY DYNAMIC COMMON	000276/ 190
-QO- DYNAMIC COMMON	003554/ 1900
RADIATION CONDUCTOR DYNAMIC COMMON	000574/ 380
GRAY BODY MINIMUM - MAXIMUM CORE	123573/ 42875 - 123723/ 42963
-QO- MINIMUM - MAXIMUM CORE	125147/ 43623 - 130557/ 45423
RADIATION CONDUCTOR MINIMUM - MAXIMUM CORE	125228/ 43670 - 125472/ 43834
MINIMUM CORE NEEDED FOR PROCESSOR EXECUTION	150500/ 53568
MAXIMUM CORE NEEDED FOR PROCESSOR EXECUTION	150500/ 53568
AMOUNT OF CORE THAT WILL BE USED BY PROCESSSOR	150500/ 53568

MODEL = SAMPLE SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
WRAP UP OF THE PRE-PROCESSOR

PRE-PROCESSOR ACCOUNTING INFORMATION	CP-SEC	DYN-STORAGE
SOURCE EDITING	1.900	676
DOCUMENTATION DATA PRE-PROCESSING	.000	0
QUANTITIES DATA PRE-PROCESSING	.034	266
ARRAY DATA PRE-PROCESSING	.000	0
SURFACE DATA PRE-PROCESSING (PASS 1)	1.832	64
SURFACE DATA PRE-PROCESSING (PASS 2)	.579	1141
BCS DATA PRE-PROCESSING	.210	186
FORM FACTOR DATA PRE-PROCESSING	.665	1038
SHADOW DATA PRE-PROCESSING	.000	0
FLUX DATA PRE-PROCESSING	.000	0
CORRESPONDENCE DATA PRE-PROCESSING	.252	101
OPERATIONS DATA PRE-PROCESSING	4.177	884
SUBROUTINE DATA PRE-PROCESSING	.302	0
SEQENTIAL TAPE INITIALIZATION	.025	0

TOTAL CP TIME FOR PRE-PROCESSOR ..... 10.655 DECIMAL SECONDS OR 000013 OCTAL SECONDS

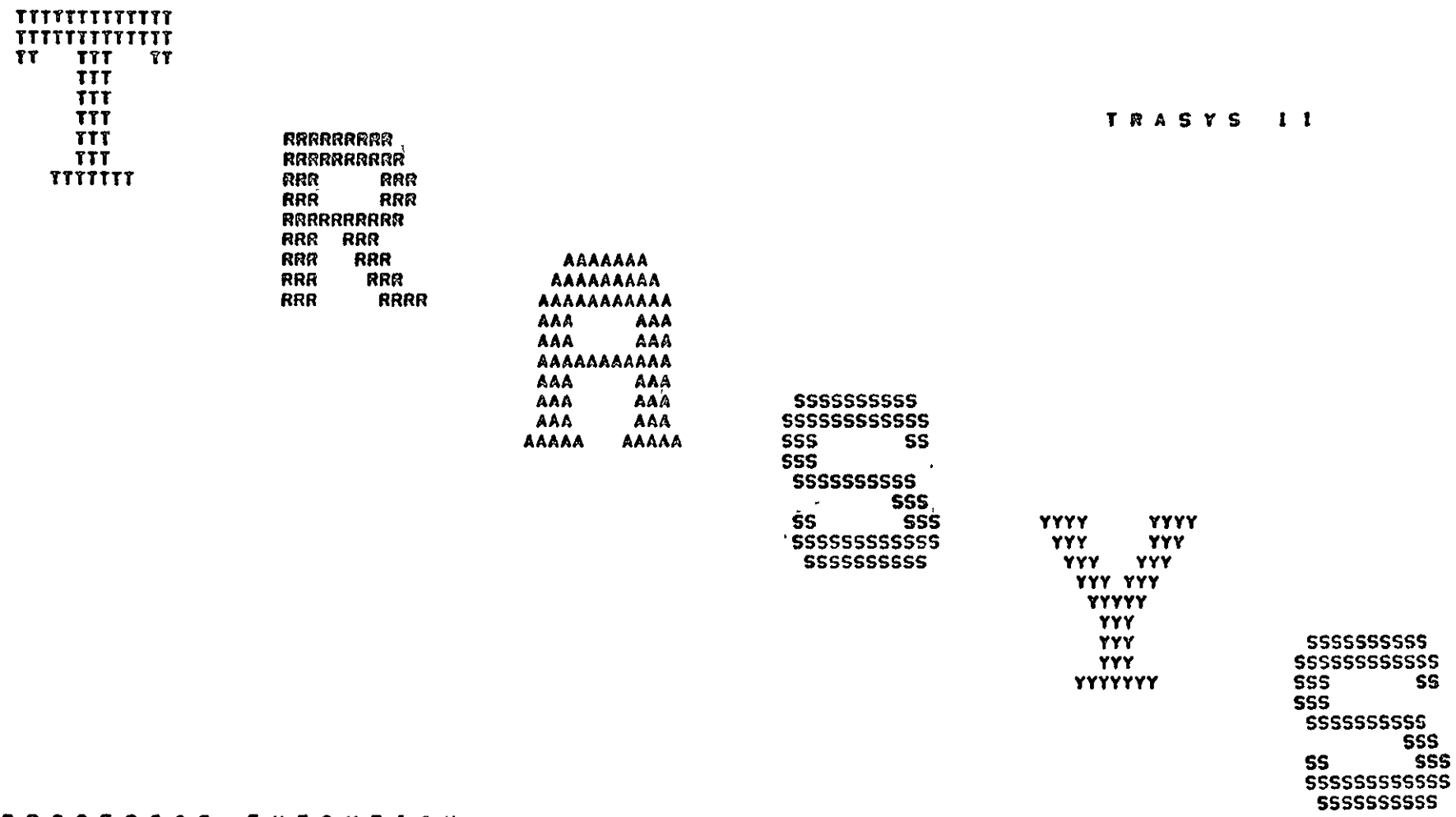
MINIMUM DYNAMIC STORAGE NEEDED BY PRE-PROCESSOR .. 1141 DECIMAL WORDS

DYNAMIC STORAGE AVAILABLE TO PRE-PROCESSOR ..... 10000 DECIMAL WORDS

NORMAL TERMINATION BY PRE-PROCESSOR

```
@PMD,BLEP


@ASG,T/S RSO.,8C,RSO,92,RSO APPENDIX H, CASE 5.


@TEST TNE/1/S3


@JUMP L3
INTERVENING STATEMENTS SKIPPED


@L3:FREE DATA1.


@FREE 14
```

NASA/MARTIN MARIETTA
THERMAL RADIATION ANALYSIS SYSTEM
UNIVAC 1110/EXEC 8



PROCESSOR EXECUTION

VERSION.MODIFICATION ... UL2E6
MODIFICATION DATE 061978

DATE OF RUN 062878
TIME OF RUN 022222
JOB NUMBER RVMH05

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
PROCESSING OPERATIONS DATA

SEQUENCE	NODE	BCS	AREA	ALPH	EMISS	SURF. TYPE	ACTIVE	--------COMMENTS----------
1	1	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
2	2	BOXINR	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
3	3	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
4	4	BOXINR	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
5	11	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT FRONT
6	12	BOXINL	1.00000	.900	.900	RECTANGLE	BOTTOM	INNER RIGHT SIDE
7	13	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BACK
8	14	BOXINL	1.00000	.900	.900	RECTANGLE	TOP	INNER RIGHT BOTTOM
9	200	LIDSP	2.00000	.100	.100	RECTANGLE	BOTTOM	SPECULAR LID
10	21	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
11	22	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
12	23	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
13	24	BOXOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
14	25	BOXOUT	1.04040	.200	.900	RECTANGLE	TOP	OUTER SURFACES
15	26	LIDOUT	2.06040	.200	.900	RECTANGLE	TOP	OUTER SURFACE OF LID

NODE, AREA, AND PROPERTIES ARRAYS HAVE BEEN WRITTEN ON THE -RSO- TAPE
BY -BUILDC- (ACCESS NUMBER = 1)

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
FORM FACTOR CALCULATION LINK.

FORM FACTORS AND COMBINED FORM FACTORS - USER INPUT AND DEFAULT PARAMETERS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
FFACC	.0500	.0500	ORIENTATION ACCURACY PARAMETER	N/A
FFACCS	.1000	.1000	SHADOWING ACCURACY PARAMETER	N/A
FFMIN	.1-05	1.0E-06	PARAMETER TO ELIMINATE SMALL FORM FACTORS	N/A
FFNOSH	SHAD	SHAD	OVER RIDE SHADOWING PARAMETER	(SHAD,NOSH)
*FFPNCH	NO	NO	PARAMETER TO PUNCH FORM FACTORS	(YES,NO)
FFPRNT	YES	YES	FLAG FOR COMPREHENSIVE FF AND CH PRINT	(YES,NO,FF,CH,RB)
FFRATL	15.0	15.0	RATIO FOR USING SUB-NODE TECHNIQUE	N/A
FFCHB	CORR	CORR	FLAG FOR COMBINING FORM FACTORS	(YES,NO,AUTO,CORR)

* -FFPNCH WILL DEFAULT TO -YES- ON CALCULATED VALUES IF THE -RSO- FILE IS NOT SPECIFIED IN THE OPTIONS DATA BLOCK

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
FORM FACTOR CALCULATION LINK.

SEQUENCE	NODE	AREA	ALPH	EMISS
1	1	1.00000	.900	.900
2	2	1.00000	.900	.900
3	3	1.00000	.900	.900
4	4	1.00000	.900	.900
5	11	1.00000	.900	.900
6	12	1.00000	.900	.900
7	13	1.00000	.900	.900
8	14	1.00000	.900	.900
9	200	2.00000	.100	.100
10	21	2.06040	.200	.900
11	22	2.06040	.200	.900
12	23	1.04040	.200	.900
13	24	2.06040	.200	.900
14	25	1.04040	.200	.900
15	26	2.06040	.200	.900

NUMBER OF NODES = 15 NUMBER OF SURFACES = 9

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QQCAL
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR WAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SHALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
1	2	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	22.033	1108	1108	*
1	3	CAL	.201522	.201522	.201522	.201522	.201522	1.000000	1.000000	.534	36	36	
1	4	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	22.051	1108	1108	*
1	12	CAL	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.300	36	36	
1	13	CAL	.086058	.086058	.086058	.086058	.086058	1.000000	1.000000	.367	36	36	
1	14	CAL	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	21.722	1024	1024	*
1	200	CAL	.193994	.096997	.193994	.096997	.193994	1.000000	1.000000	.407	36	32	
1	FF SUM = .9698		ROW CP TIME = 68.579										
	FORM FACTOR RESTART (RSO) RECORD = 21												
2	3	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	21.730	1108	1108	*
2	4	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	21.476	1108	1108	*
2	11	CAL	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.302	36	36	
2	12	CAL	.068832	.068832	.068832	.068832	.068832	1.000000	1.000000	.366	36	36	
2	13	CAL	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.286	36	36	
2	14	CAL	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.298	36	36	
2	200	CAL	.132107	.066054	.132107	.066054	.132107	1.000000	1.000000	10.647	657	642	*
2	FF SUM = .9218		ROW CP TIME = 56.148										
	FORM FACTOR RESTART (RSO) RECORD = 22												
3	4	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	21.903	1108	1108	*
3	11	CAL	.086058	.086058	.086058	.086058	.086058	1.000000	1.000000	.362	36	36	
3	12	CAL	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.289	36	36	
3	14	CAL	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	20.978	1024	1024	*
3	200	CAL	.060738	.030369	.060738	.030369	.060738	1.000000	1.000000	10.654	650	640	*
3	FF SUM = .8365		ROW CP TIME = 55.291										
	FORM FACTOR RESTART (RSO) RECORD = 23												
4	11	CAL	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	20.992	1024	1024	*

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ	
4	12	CAL	.032922	.032922	.032922	.032922	.032922	1.000000	1.000000	.282	36	36	
4	13	CAL	.040501	.040501	.040501	.040501	.040501	1.000000	1.000000	21.150	1024	1024	*
4	200	CAL	.164809	.082404	.164809	.082404	.164809	1.000000	1.000000	.392	36	32	
4	FF SUM = .9009		ROW CP TIME = 43.989										
	FORM FACTOR RESTART (RSO) RECORD = 24												
11	12	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	17.865	1108	1108	*
11	13	CAL	.201522	.201522	.201522	.201522	.201522	1.000000	1.000000	.427	36	36	
11	14	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	16.517	1108	1108	*
11	200	CAL	.193994	.096997	.193994	.096997	.193994	1.000000	1.000000	.343	36	32	
11	FF SUM = .9698		ROW CP TIME = 35.989										
	FORM FACTOR RESTART (RSO) RECORD = 25												
12	13	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	16.572	1108	1108	*
12	14	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	16.400	1108	1108	*
12	200	CAL	.132107	.066054	.132107	.066054	.132107	1.000000	1.000000	7.993	657	642	*
12	FF SUM = .9218		ROW CP TIME = 41.774										
	FORM FACTOR RESTART (RSO) RECORD = 26												
13	14	CAL	.207379	.207379	.207379	.207379	.207379	1.000000	1.000000	16.951	1108	1108	*
13	200	CAL	.060738	.030369	.060738	.030369	.060738	1.000000	1.000000	8.294	650	640	*
13	FF SUM = .8365		ROW CP TIME = 26.056										
	FORM FACTOR RESTART (RSO) RECORD = 27												
14	200	CAL	.164809	.082404	.164809	.082404	.164809	1.000000	1.000000	.324	36	32	

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RSCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
FORM FACTOR CALCULATION LINK.

(* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
(UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
(9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I	NODE J	COMPUTATION	FIR(I,J) W/SHAD	FIR(J,I) W/SHAD	FSOL(I,J) W/SHAD	FSOL(J,I) W/SHAD	FF(I,J) WO/SHAD	SHAD.IR FACTOR	SHAD.SOL FACTOR	CP TIME (SEC)	NEI	NEJ
14	FF SUM = .9009	ROW CP TIME = 1.115										
	FORM FACTOR RESTART (RSO) RECORD = 28											
200	FF SUM = .5518	ROW CP TIME = .654										
	FORM FACTOR RESTART (RSO) RECORD = 29											
21	FF SUM = .0000	ROW CP TIME = .502										
	FORM FACTOR RESTART (RSO) RECORD = 30											
22	FF SUM = .0000	ROW CP TIME = .386										
	FORM FACTOR RESTART (RSO) RECORD = 31											
23	FF SUM = .0000	ROW CP TIME = .334										
	FORM FACTOR RESTART (RSO) RECORD = 32											
24	FF SUM = .0000	ROW CP TIME = .201										
	FORM FACTOR RESTART (RSO) RECORD = 33											

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MODEL=SAMPLE CONFIG=CASE5  STEP=-1                SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEM/DRCAL/AQCAL/QOCAL
FORM FACTOR CALCULATION LINK.

          (* -INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
          (R -INDICATES FF CALCULATED FROM NODE J TO NODE I BECAUSE NODE J HAS SMALLEST AREA)
          (UN-INDICATES UNKNOWN CALCULATION MODE BECAUES OF RSI, RTI, OR CARD INPUT)
          (9.999999 -INDICATES UNKNOWN DATA VALUE BECAUSE OF INSUFFICIENT CARD INPUT)

NODE I  NODE J  COMPUTATION  FIR(I,J)  FIR(J,I)  FSOL(I,J)  FSOL(J,I)  FF(I,J)  SHAD.IR  SHAD.SOL  CP TIME   NEI   NEJ
                             W/SHAD     W/SHAD     W/SHAD     W/SHAD     WO/SHAD  FACTOR   FACTOR     (SEC)

    25   FF SUM =   .0000      ROW CP TIME =      .145
          FORM FACTOR RESTART (RSO) RECORD =    34

    28   FF SUM =   .0000      ROW CP TIME =      .008
          FORM FACTOR RESTART (RSO) RECORD =    35

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

FF FORM FACTORS FOR CONFIGURATION CASE5  HAVE BEEN STORED ON RSO.
LAST RESTART RECORD WRITTEN =    35

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/NSCAL/GSCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
FORM FACTOR CALCULATION LINK.

SUMMARY OF FORM FACTOR SUMS FOR ALL NODES

NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM	NODE I- FF SUM
1- .9690	2- .9218	3- .8365	4- .8009	11- .9690	12- .9218
13- .8365	14- .9009	200- .5516	21- .0000	22- .0000	23- .0000
24- .0000	25- .0000	26- .0000			

TOTAL TIME FOR FORM FACTOR SEGMENT 331.794

TOTAL TIME SINCE START OF RUN 395.910

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QDCAL
IMAGE FACTOR CALCULATION LINK.

NODE	AREA	ALPH	EMISS	SPECULAR REFL(SOL)	SPECULAR REFL(IR)
1	1.00000	.900+00	.900+00	.000	.000
2	1.00000	.900+00	.900+00	.000	.000
3	1.00000	.900+00	.900+00	.000	.000
4	1.00000	.900+00	.900+00	.000	.000
11	1.00000	.900+00	.900+00	.000	.000
12	1.00000	.900+00	.900+00	.000	.000
13	1.00000	.900+00	.900+00	.000	.000
14	1.00000	.900+00	.900+00	.000	.000
200	2.00000	.100+00	.100+00	.800+00	.800+00
21	2.06040	.200+00	.900+00	.000	.000
22	2.06040	.200+00	.900+00	.000	.000
23	1.04040	.200+00	.900+00	.000	.000
24	2.06040	.200+00	.900+00	.000	.000
25	1.04040	.200+00	.900+00	.000	.000
26	2.06040	.200+00	.900+00	.000	.000

NUMBER OF NODES = 15 NUMBER OF SURFACES = 9

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
IMAGE FACTOR CALCULATION LINK.

(* INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R INDICATES FF CALCULATED FROM J TO I)

NODE I	NODE J	COMPUTATION	IFE(I,J) W/SHAD	IFE(J,I) W/SHAD	IFA(I,J) W/SHAD	CP TIME (SEC)	
1	1	CAL.	.053297	.053297	.053297	.166	
1	2	CAL.	.221283	.221283	.221283	.292	
1	3	CAL.	.201522	.201522	.201522	.366	
1	4	CAL.	.217091	.217091	.217091	.472	
1	11	CAL.	.037057	.037057	.037057	.617	
1	12	CAL.	.049448	.049448	.049448	.737	
1	13	CAL.	.086058	.086058	.086058	.805	
1	14	CAL.	.047559	.047559	.047559	.929	
1	200	CAL.	.193994	.096997	.193994	.937	
1	ROW CP TIME =		.988	-	RECT	INNER RIGHT FRONT	
1	ROW RESTART RECORD =		37. HAS BEEN WRITTEN TO THE RSO FILE				
1	ROW CP TIME =		1.007	+	RECT	INNER RIGHT FRONT	
1	ROW RESTART RECORD =		38. HAS BEEN WRITTEN TO THE RSO FILE				
2	3	CAL.	.207379	.207379	.207379	.131	
2	4	CAL.	.208765	.208765	.208765	.243	
2	11	CAL.	.049448	.049448	.049448	.373	
2	12	CAL.	.077642	.077642	.077642	.481	
2	13	CAL.	.032922	.032922	.032922	.557	
2	14	CAL.	.034983	.034983	.034983	.651	
2	200	CAL.	.132107	.066054	.132107	.659	
2	ROW CP TIME =		.711	-	RECT	INNER RIGHT SIDE	
2	ROW RESTART RECORD =		38. HAS BEEN WRITTEN TO THE RSO FILE				
2	ROW CP TIME =		.734	+	RECT	INNER RIGHT SIDE	
2	ROW RESTART RECORD =		39. HAS BEEN WRITTEN TO THE RSO FILE				
3	4	CAL.	.207379	.207379	.207379	.106	
3	11	CAL.	.086058	.086058	.086058	.171	
3	12	CAL.	.032922	.032922	.032922	.217	
3	14	CAL.	.040501	.040501	.040501	.309	
3	200	CAL.	.060738	.030369	.060738	.317	
3	ROW CP TIME =		.364	+	RECT	INNER RIGHT BACK	
3	ROW RESTART RECORD =		39. HAS BEEN WRITTEN TO THE RSO FILE				
3	ROW CP TIME =		.383	+	RECT	INNER RIGHT BACK	
3	ROW RESTART RECORD =		40. HAS BEEN WRITTEN TO THE RSO FILE				

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
IMAGE FACTOR CALCULATION LINK.

(* INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R INDICATES FF CALCULATED FROM J TO I)

NODE I	NODE J	COMPUTATION	IFE(I,J) W/SHAD	IFE(J,I) W/SHAD	IFA(I,J) W/SHAD	CP TIME (SEC)	
4	11	CAL.	.047559	.047559	.047559	.204	
4	12	CAL.	.034983	.034983	.034983	.328	
4	13	CAL.	.040501	.040501	.040501	.394	
4	200	CAL.	.164809	.082404	.164809	.498	
4	ROW CP TIME =		.546	+	RECT	INNER RIGHT BOTTOM	
4	ROW RESTART RECORD =		40, HAS BEEN WRITTEN TO THE RSO FILE				
4	ROW CP TIME =		.563	+	RECT	INNER RIGHT BOTTOM	
4	ROW RESTART RECORD =		41, HAS BEEN WRITTEN TO THE RSO FILE				
11	11	CAL.	.053297	.053297	.053297	.137	
11	12	CAL.	.221283	.221283	.221283	.254	
11	13	CAL.	.201522	.201522	.201522	.323	
11	14	CAL.	.217091	.217091	.217091	.441	
11	200	CAL.	.193994	.096997	.193994	.448	
11	ROW CP TIME =		.482	-	RECT	INNER RIGHT FRONT	
11	ROW RESTART RECORD =		41, HAS BEEN WRITTEN TO THE RSO FILE				
11	ROW CP TIME =		.499	+	RECT	INNER RIGHT FRONT	
11	ROW RESTART RECORD =		42, HAS BEEN WRITTEN TO THE RSO FILE				
12	13	CAL.	.207379	.207379	.207379	.137	
12	14	CAL.	.208765	.208765	.208765	.247	
12	200	CAL.	.132107	.066054	.132107	.259	
12	ROW CP TIME =		.310	-	RECT	INNER RIGHT SIDE	
12	ROW RESTART RECORD =		42, HAS BEEN WRITTEN TO THE RSO FILE				
12	ROW CP TIME =		.331	+	RECT	INNER RIGHT SIDE	
12	ROW RESTART RECORD =		43, HAS BEEN WRITTEN TO THE RSO FILE				
13	14	CAL.	.207379	.207379	.207379	.101	
13	200	CAL.	.060738	.030369	.060738	.109	
13	ROW CP TIME =		.160	+	RECT	INNER RIGHT BACK	
13	ROW RESTART RECORD =		43, HAS BEEN WRITTEN TO THE RSO FILE				

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
IMAGE FACTOR CALCULATION LINK.

(* INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R INDICATES FF CALCULATED FROM J TO I)

NODE I	NODE J	COMPUTATION	IFE(I,J) W/SHAD	IFE(J,I) W/SHAD	IFA(I,J) W/SHAD	CP TIME (SEC)	
13	ROW CP TIME =	.199	+	RECT	INNER RIGHT BACK		
13	ROW RESTART RECORD =	44. HAS BEEN WRITTEN TO THE RSO FILE					
14	200	CAL.	.164809	.082404	.164809	.119	
14	ROW CP TIME =	.170	+	RECT	INNER RIGHT BOTTOM		
14	ROW RESTART RECORD =	44. HAS BEEN WRITTEN TO THE RSO FILE					
14	ROW CP TIME =	.188	+	RECT	INNER RIGHT BOTTOM		
14	ROW RESTART RECORD =	45. HAS BEEN WRITTEN TO THE RSO FILE					
200	ROW CP TIME =	.067	-	RECT	SPECULAR LID		
200	ROW RESTART RECORD =	45. HAS BEEN WRITTEN TO THE RSO FILE					
200	ROW CP TIME =	.087	+	RECT	SPECULAR LID		
200	ROW RESTART RECORD =	46. HAS BEEN WRITTEN TO THE RSO FILE					
21	ROW CP TIME =	.054	+	RECT	OUTER SURFACES		
21	ROW RESTART RECORD =	46. HAS BEEN WRITTEN TO THE RSO FILE					
21	ROW CP TIME =	.076	+	RECT	OUTER SURFACES		
21	ROW RESTART RECORD =	47. HAS BEEN WRITTEN TO THE RSO FILE					
22	ROW CP TIME =	.054	+	RECT	OUTER SURFACES		
22	ROW RESTART RECORD =	47. HAS BEEN WRITTEN TO THE RSO FILE					
22	ROW CP TIME =	.071	+	RECT	OUTER SURFACES		
22	ROW RESTART RECORD =	48. HAS BEEN WRITTEN TO THE RSO FILE					

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
IMAGE FACTOR CALCULATION LINK.

(@ INDICATES NODE PAIR HAS BEEN SUBDIVIDED)
(R INDICATES FF CALCULATED FROM J TO I)

NODE I	NODE J	COMPUTATION	IFE(I,J) W/SHAD	IFE(J,I) W/SHAD	IFA(I,J) W/SHAD	CP TIME (SEC)	
23		ROW CP TIME =	.088	+	RECT		OUTER SURFACES
23		ROW RESTART RECORD =	48, HAS BEEN WRITTEN TO THE RSO FILE				
23		ROW CP TIME =	.086	+	RECT		OUTER SURFACES
23		ROW RESTART RECORD =	49, HAS BEEN WRITTEN TO THE RSO FILE				
24		ROW CP TIME =	.021	+	RECT		OUTER SURFACES
24		ROW RESTART RECORD =	49, HAS BEEN WRITTEN TO THE RSO FILE				
24		ROW CP TIME =	.038	+	RECT		OUTER SURFACES
24		ROW RESTART RECORD =	50, HAS BEEN WRITTEN TO THE RSO FILE				
25		ROW CP TIME =	.023	+	RECT		OUTER SURFACES
25		ROW RESTART RECORD =	50, HAS BEEN WRITTEN TO THE RSO FILE				
25		ROW CP TIME =	.042	+	RECT		OUTER SURFACES
25		ROW RESTART RECORD =	51, HAS BEEN WRITTEN TO THE RSO FILE				
26		ROW CP TIME =	.013	+	RECT		OUTER SURFACE OF LID
26		ROW RESTART RECORD =	51, HAS BEEN WRITTEN TO THE RSO FILE				
26		ROW CP TIME =	.037	+	RECT		OUTER SURFACE OF LID
26		ROW RESTART RECORD =	52, HAS BEEN WRITTEN TO THE RSO FILE				

TOTAL CP TIME (SEC) FOR PROBLEM = 4.712

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
GRAY BODIES COMPUTATION LINK.

GREY BODIES

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
GBWBND	BOTH	BOTH	WAVEBAND DEFINITION PARAMETER	(2HIR,3HSOL,4HBOTH)

IR GRAY BODIES FOR CONFIGURATION CASE5 HAVE BEEN COMPUTED AND STORED ON RSO.
LAST RESTART RECORD WRITTEN = 69

SOL GRAY BODIES FOR CONFIGURATION CASE5 HAVE BEEN COMPUTED AND STORED ON RSO.
LAST RESTART RECORD WRITTEN = 86

TOTAL TIME TO COMPUTE GRAY BODIES .83

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTORS

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
RKPNCH	PUN	NO	PUNCH/NO PUNCH PARAMETER FOR RADKS	(YES,NO)
RKMIN	.0001	0.0001	PARAMETER TO ELIMINATE SMALL RADK S	N/A
IRKCN	1	1	INITIAL RADIATION CONDUCTOR ID NUMBER	N/A
RKSP	SPACE	NO	MNEMONIC FLAG FOR COMPUTATION OF RADKS TO SPACE	(SPACE,NO)
IRKNSP	999	32767	SPACE NODE ID NUMBER	N/A
SIGMA	.17-08	1.713E-9	STEFAN-BOLTZMANN CONSTANT	N/A
RKAMPF	1.00	1.0	AREA MULTIPLYING FACTOR	N/A
RKTAPE	NO	NO	PARAMETER TO OUTPUT TO BCD TAPE	(TAPE,NO)
RFRAC	.7+00	0.7	SIGNIFICANT RADIATION FRACTION	(0. TO 1.)
RTOL	.990	0.99	DECIMAL FRACTION OF LAST RADK SAVED	N/A
NERN	0	0	EFFECTIVE RADIATION NODE (ERN) NUMBER	N/A

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
RADIATION CONDUCTOR GENERATION LINK.

SPECIAL RADIATION NODES

NONE

MESS SPECIAL NODES

PRIMARY SECONDARY

NONE

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADKS) CARDS

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED AND/OR BCDOU RADKS -	-	1.	1.	2.	.32562-09$
PUNCHED AND/OR BCDOU RADKS -	-	2.	1.	3.	.29703-09$
PUNCHED AND/OR BCDOU RADKS -	-	3.	1.	4.	.31982-09$
PUNCHED AND/OR BCDOU RADKS -	-	4.	1.	11.	.66666-10$
PUNCHED AND/OR BCDOU RADKS -	-	5.	1.	12.	.81362-10$
PUNCHED AND/OR BCDOU RADKS -	-	6.	1.	13.	.12813-09$
PUNCHED AND/OR BCDOU RADKS -	-	7.	1.	14.	.76972-10$
PUNCHED AND/OR BCDOU RADKS -	-	8.	1.	200.	.31877-10$
PUNCHED AND/OR BCDOU RADKS -	-	9.	2.	3.	.30306-09$
PUNCHED AND/OR BCDOU RADKS -	-	10.	2.	4.	.30618-09$
PUNCHED AND/OR BCDOU RADKS -	-	11.	2.	11.	.81362-10$
PUNCHED AND/OR BCDOU RADKS -	-	12.	2.	12.	.11709-09$
PUNCHED AND/OR BCDOU RADKS -	-	13.	2.	13.	.55689-10$
PUNCHED AND/OR BCDOU RADKS -	-	14.	2.	14.	.58420-10$
PUNCHED AND/OR BCDOU RADKS -	-	15.	2.	200.	.22359-10$
PUNCHED AND/OR BCDOU RADKS -	-	16.	3.	4.	.30264-09$
PUNCHED AND/OR BCDOU RADKS -	-	17.	3.	11.	.12813-09$
PUNCHED AND/OR BCDOU RADKS -	-	18.	3.	12.	.55689-10$
PUNCHED AND/OR BCDOU RADKS -	-	19.	3.	13.	.10153-10$
PUNCHED AND/OR BCDOU RADKS -	-	20.	3.	14.	.63760-10$
PUNCHED AND/OR BCDOU RADKS -	-	21.	3.	200.	.11499-10$
PUNCHED AND/OR BCDOU RADKS -	-	22.	4.	11.	.76972-10$
PUNCHED AND/OR BCDOU RADKS -	-	23.	4.	12.	.58420-10$
PUNCHED AND/OR BCDOU RADKS -	-	24.	4.	13.	.63760-10$
PUNCHED AND/OR BCDOU RADKS -	-	25.	4.	14.	.10041-10$
PUNCHED AND/OR BCDOU RADKS -	-	26.	4.	200.	.27106-10$
PUNCHED AND/OR BCDOU RADKS -	-	27.	11.	12.	.32562-09$
PUNCHED AND/OR BCDOU RADKS -	-	28.	11.	13.	.29703-09$
PUNCHED AND/OR BCDOU RADKS -	-	29.	11.	14.	.31982-09$
PUNCHED AND/OR BCDOU RADKS -	-	30.	11.	200.	.31877-10$
PUNCHED AND/OR BCDOU RADKS -	-	31.	12.	13.	.30306-09$
PUNCHED AND/OR BCDOU RADKS -	-	32.	12.	14.	.30618-09$
PUNCHED AND/OR BCDOU RADKS -	-	33.	12.	200.	.22359-10$
PUNCHED AND/OR BCDOU RADKS -	-	34.	13.	14.	.30264-09$
PUNCHED AND/OR BCDOU RADKS -	-	35.	13.	200.	.11499-10$
PUNCHED AND/OR BCDOU RADKS -	-	36.	14.	200.	.27106-10$
PUNCHED AND/OR BCDOU RADKS -	-	37.	1.	999.	.11470-09$
PUNCHED AND/OR BCDOU RADKS -	-	38.	2.	999.	.24900-09$
PUNCHED AND/OR BCDOU RADKS -	-	39.	3.	999.	.34933-09$
PUNCHED AND/OR BCDOU RADKS -	-	40.	4.	999.	.35431-09$

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
RADIATION CONDUCTOR GENERATION LINK.

RADIATION CONDUCTOR (RADK) CARDS

AREA UNITS = INPUT UNITS * AMPF, WHERE AMPF = 1.00000

PUNCHED AND/OR BCDOU RADKS -	-	41.	11.	999.	.11470-09$
PUNCHED AND/OR BCDOU RADKS -	-	42.	12.	999.	.24900-09$
PUNCHED AND/OR BCDOU RADKS -	-	43.	13.	999.	.34933-09$
PUNCHED AND/OR BCDOU RADKS -	-	44.	14.	999.	.35431-09$
PUNCHED AND/OR BCDOU RADKS -	-	45.	200.	999.	.15660-09$
PUNCHED AND/OR BCDOU RADKS -	-	46.	21.	999.	.31765-08$
PUNCHED AND/OR BCDOU RADKS -	-	47.	22.	999.	.31765-08$
PUNCHED AND/OR BCDOU RADKS -	-	48.	23.	999.	.16040-08$
PUNCHED AND/OR BCDOU RADKS -	-	49.	24.	999.	.31765-08$
PUNCHED AND/OR BCDOU RADKS -	-	50.	25.	999.	.16040-08$
PUNCHED AND/OR BCDOU RADKS -	-	51.	26.	999.	.31765-08$

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QQCAL
RADIATION CONDUCTOR GENERATION LINK.

CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE BEFORE RKMIN SCREENING

1 -	.10000+01	2 -	.10000+01	3 -	.10000+01	4 -	.10000+01	11 -	.10000+01	12 -	.10000+01
13 -	.10000+01	14 -	.10000+01	200 -	.10000+01	21 -	.10000+01	22 -	.10000+01	23 -	.10000+01
24 -	.10000+01	25 -	.10000+01	26 -	.10000+01						

MODEL=SAMPLE CONFIG=CASE5 STEP=-1 SAMPLE CASE 5 - FFCAL/RDCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QQCAL
RADIATION CONDUCTOR GENERATION LINK.

CONSERVATION CHECKS
RADIATION SUMS FOR EACH NODE AFTER RKMIN SCREENING

1 -	.10000+01	2 -	.10000+01	3 -	.10000+01	4 -	.10000+01	11 -	.10000+01	12 -	.10000+01
13 -	.10000+01	14 -	.10000+01	200 -	.10000+01	21 -	.10000+01	22 -	.10000+01	23 -	.10000+01
24 -	.10000+01	25 -	.10000+01	26 -	.10000+01						

TOTAL TIME TO COMPUTE AND CONDENSE RADKS = .57

MODEL=SAMPLE CONFIG=CASE5 STEP=10000 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
0	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.300+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.300+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE5 STEP=10000 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QQCAL
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10000

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGHA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE5 STEP=10000 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10000TRUE ANOMALY = .00000 TIME = .00000
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX(QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	CALC	.001	9	0
2	.94028+02	.18576+03	.5062	CALC	.089	81	4
3	.00000	.10725+03	.0000	CALC	.130	64	7
4	.16512+03	.37152+03	.4444	CALC	.199	81	8
11	.00000	.00000	.0000	CALC	.209	9	0
12	.00000	.00000	.0000	CALC	.219	9	0
13	.10055+02	.10725+03	.0938	CALC	.266	64	6
14	.91734+02	.37152+03	.2469	CALC	.330	81	7
200	.00000	.00000	.0000	CALC	.340	8	0
21	.00000	.00000	.0000	CALC	.350	8	0
22	.10725+03	.10725+03	1.0000	CALC	.429	66	9
23	.18576+03	.18576+03	1.0000	CALC	.503	81	6
24	.00000	.00000	.0000	CALC	.514	8	0
25	.00000	.00000	.0000	CALC	.525	9	0
26	.18687+03	.18687+03	1.0000	CALC	.633	78	9

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DICOM

TOTAL ELAPSED TIME IN PROBLEM = 403.015 SECONDS
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 91

MODEL=SAMPLE CONFIG=CASE5 STEP=10000 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10000 TRUE ANOMALY = .00000 TIME = .00000
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	CALC	.000	.000	.391+02	.268+02	.000	.000	.000	66	9	7
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 93											
2	CALC	.000	.000	.400+02	.264+02	.000	.000	.470	66	9	5
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 95											
3	CALC	.000	.000	.402+02	.268+02	.000	.000	.895	61	9	7
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 97											
4	CALC	.000	.000	.000	.000	.000	.000	.975	1	9	7
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 99											
11	CALC	.000	.000	.391+02	.268+02	.000	.000	1.389	66	9	7
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 101											
12	CALC	.000	.000	.382+02	.264+02	.000	.000	1.821	66	9	5
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 103											
13	CALC	.000	.000	.402+02	.268+02	.000	.000	2.280	61	9	7
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 105											
14	CALC	.000	.000	.000	.000	.000	.000	2.361	1	9	7
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 107											
200	CALC	.215+02	.144+02	.834+02	.559+02	.258	.257	4.078	133	18	8
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 109											
21	CALC	.110+03	.742+02	.110+03	.742+02	1.000	1.000	6.497	112	18	9
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 111											
22	CALC	.402+02	.268+02	.402+02	.268+02	1.000	1.000	7.070	61	10	9
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 113											
23	CALC	.400+02	.264+02	.400+02	.264+02	1.000	1.000	7.593	66	9	7
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 115											
24	CALC	.391+02	.268+02	.391+02	.268+02	1.000	1.000	8.204	66	10	9
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 117											

MODEL=SAMPLE CONFIG=CASE5 STEP=10000 SAMPLE CASE 5 - FFCAL/RDCAL/OBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10000 TRUE ANOMALY = .00000 TIME = .00000
**** IN THE SUN ****

NODE NUMBER	COMPUT	DIRECT INCID. FLUX ALBEDO	DIRECT INCID. FLUX PLANETARY	UNSHADOWED FLUX ALBEDO	UNSHADOWED FLUX PLANETARY	SHADOW FACTORS ALBEDO	SHADOW FACTORS PLAN	CP TIME (SECONDS)	ELEMENTS PLAN	ELEMENTS SURF	SHAD SURF
25	CALC	.382+02	.264+02	.382+02	.264+02	1.000	1.000	0.703	66	9	7
PLANETARY FF HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 119											
26	CALC	.659+01	.457+01	.659+01	.457+01	1.000	1.000	0.973	52	2	0

NOTE--

FLUX VALUES FLAGGED (+++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICOMP

TOTAL ELAPSED TIME IN PROBLEM = 412.485 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 129

MODEL=SAMPLE CONFIG=CASE5 STEP=10001 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QQCAL
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
90.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES.		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.000	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
:900+02	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE5 STEP=10001 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10001

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE5 STEP=10001 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/GOCAL
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10001 TRUE ANOMALY = 90.00000 TIME = .36701
◇◇◇◇ IN THE SUN ◇◇◇◇

NODE NUMBER	DIRECT FLUX(QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	CALC	.001	9	0
2	.00000	.00000	.0000	CALC	.037	9	0
3	.00000	.42900+03	.0000	CALC	.086	81	7
4	.00000	.00000	.0000	CALC	.097	9	0
11	.00000	.00000	.0000	CALC	.107	9	0
12	.00000	.00000	.0000	CALC	.118	9	0
13	.00000	.42900+03	.0000	CALC	.179	81	7
14	.00000	.00000	.0000	CALC	.189	9	0
200	.30335+03	.30335+03	1.0000	CALC	.283	78	8
21	.00000	.00000	.0000	CALC	.296	8	0
22	.42900+03	.42900+03	1.0000	CALC	.388	78	9
23	.00000	.00000	.0000	CALC	.400	9	0
24	.00000	.00000	.0000	CALC	.411	8	0
25	.00000	.00000	.0000	CALC	.422	9	0
26	.00000	.00000	.0000	CALC	.431	8	0

NOTE--

FLUX VALUES FLAGGED (+++◇◇◇) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DICO

TOTAL ELAPSED TIME IN PROBLEM = 413.370 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10001 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QQCAL
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10001 TRUE ANOMALY = 90.00000 TIME = .36701
**** IN THE SUN ****

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	CALC	.000	.000	.000	.000	.000	.000	.000	68	0	0
2	CALC	.000	.000	.000	.000	.000	.000	.061	66	0	0
3	CALC	.000	.000	.000	.000	.000	.000	.094	51	0	0
4	CALC	.000	.000	.000	.000	.000	.000	.109	1	6	0
11	CALC	.000	.000	.000	.000	.000	.000	.147	66	0	0
12	CALC	.000	.000	.000	.000	.000	.000	.191	66	0	0
13	CALC	.000	.000	.000	.000	.000	.000	.229	61	0	0
14	CALC	.000	.000	.000	.000	.000	.000	.249	1	0	0
200	CALC	.120+01	.144+02	.465+01	.559+02	.258	.257	.325	133	0	0
21	CALC	.143+01	.742+02	.143+01	.742+02	1.000	1.000	.383	112	0	0
22	CALC	.206+01	.268+02	.206+01	.268+02	1.000	1.000	.423	81	0	0
23	CALC	.638+00	.264+02	.638+00	.264+02	1.000	1.000	.465	66	0	0
24	CALC	.000	.268+02	.000	.268+02	1.000	1.000	.503	66	0	0
25	CALC	.634+00	.264+02	.634+00	.264+02	1.000	1.000	.544	66	0	0
26	CALC	.000	.457+01	.000	.457+01	1.000	1.000	.579	52	0	0

NOTE--

FLUX VALUES FLAGGED (+++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICOMP

TOTAL ELAPSED TIME IN PROBLEM = 413.997 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 142

MODEL=SAMPLE CONFIG=CASE5 STEP=10002 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/GOCAL
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
180.000	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.300+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.150+03	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE5 STEP=10002 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/ORCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

♦♦♦♦♦♦♦♦ NSTEP NO = 10002

♦♦♦♦ COMPUTED OR INPUT ORBIT DATA ♦♦♦♦

VALUE	VARIABLE DESCRIPTION	♦♦♦	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

♦♦♦♦ PLANET --EARTH -- DATA ♦♦♦♦

VALUE	DESCRIPTION	NAME	♦♦♦	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE5 STEP=10002 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10002TRUE ANOMALY = 180.00000 TIME = .73402
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX(QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	++++++	.000	0	0
2	.00000	.00000	.0000	++++++	.034	0	0
3	.00000	.00000	.0000	++++++	.038	0	0
4	.00000	.00000	.0000	++++++	.045	0	0
11	.00000	.00000	.0000	++++++	.049	0	0
12	.00000	.00000	.0000	++++++	.053	0	0
13	.00000	.00000	.0000	++++++	.058	0	0
14	.00000	.00000	.0000	++++++	.064	0	0
200	.00000	.00000	.0000	++++++	.068	0	0
21	.00000	.00000	.0000	++++++	.072	0	0
22	.00000	.00000	.0000	++++++	.076	0	0
23	.00000	.00000	.0000	++++++	.080	0	0
24	.00000	.00000	.0000	++++++	.084	0	0
25	.00000	.00000	.0000	++++++	.088	0	0
26	.00000	.00000	.0000	++++++	.092	0	0

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DICOM

TOTAL ELAPSED TIME IN PROBLEM = 414.518 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10002 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/ORCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10002 TRUE ANOMALY = 180.00000 TIME = .73402
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	++++++	.000	.000	.000	.000	.000	.000	.001	0	0	0
2	++++++	.000	.000	.000	.000	.000	.000	.031	0	0	0
3	++++++	.000	.000	.000	.000	.000	.000	.038	0	0	0
4	++++++	.000	.000	.000	.000	.000	.000	.042	0	0	0
11	++++++	.000	.000	.000	.000	.000	.000	.047	0	0	0
12	++++++	.000	.000	.000	.000	.000	.000	.051	0	0	0
13	++++++	.000	.000	.000	.000	.000	.000	.058	0	0	0
14	++++++	.000	.000	.000	.000	.000	.000	.060	0	0	0
200	++++++	.000	.144+02	.000	.000	.000	.000	.065	0	0	0
21	++++++	.000	.742+02	.000	.000	.000	.000	.072	0	0	0
22	++++++	.000	.268+02	.000	.000	.000	.000	.077	0	0	0
23	++++++	.000	.264+02	.000	.000	.000	.000	.081	0	0	0
24	++++++	.000	.268+02	.000	.000	.000	.000	.086	0	0	0
25	++++++	.000	.264+02	.000	.000	.000	.000	.091	0	0	0
26	++++++	.000	.457+01	.000	.000	.000	.000	.095	0	0	0

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICOMP

TOTAL ELAPSED TIME IN PROBLEM = 414.630 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 155

MODEL=SAMPLE CONFIG=CASE5 STEP=10003 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.720	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60900+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60900+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.359+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.104+03	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE5 STEP=10003 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10003

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET OS EMISS POWER	WOS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE5 STEP=10003 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10003 TRUE ANOMALY = 105.71977 TIME = .43111
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX(QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	CALC	.000	9	0
2	.00000	.69478+01	.0000	CALC	.048	9	4
3	.00000	.41697+03	.0000	CALC	.104	81	7
4	.00000	.00000	.0000	CALC	.114	9	0
11	.00000	.00000	.0000	CALC	.124	9	0
12	.00000	.00000	.0000	CALC	.134	9	0
13	.00000	.41697+03	.0000	CALC	.190	81	7
14	.00000	.00000	.0000	CALC	.200	9	0
200	.24401+03	.36601+03	.6667	CALC	.285	78	8
21	.10066+03	.10066+03	1.0000	CALC	.359	55	9
22	.41698+03	.41698+03	1.0000	CALC	.460	78	9
23	.69478+01	.69478+01	1.0000	CALC	.478	9	5
24	.00000	.00000	.0000	CALC	.494	8	0
25	.00000	.00000	.0000	CALC	.504	9	0
26	.00000	.00000	.0000	CALC	.513	8	0

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DICOM

TOTAL ELAPSED TIME IN PROBLEM = 415.581 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10003 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10003 TRUE ANOMALY = 105.71977 TIME = .43111
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	--DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	++++++	.000	.000	.000	.000	.000	.000	.001	0	0	0
2	++++++	.000	.000	.000	.000	.000	.000	.032	0	0	0
3	++++++	.000	.000	.000	.000	.000	.000	.037	0	0	0
4	++++++	.000	.000	.000	.000	.000	.000	.042	0	0	0
11	++++++	.000	.000	.000	.000	.000	.000	.046	0	0	0
12	++++++	.000	.000	.000	.000	.000	.000	.051	0	0	0
13	++++++	.000	.000	.000	.000	.000	.000	.056	0	0	0
14	++++++	.000	.000	.000	.000	.000	.000	.060	0	0	0
200	++++++	.000	.144+02	.000	.000	.000	.000	.065	0	0	0
21	++++++	.000	.742+02	.000	.000	.000	.000	.070	0	0	0
22	++++++	.000	.268+02	.000	.000	.000	.000	.075	0	0	0
23	++++++	.000	.264+02	.000	.000	.000	.000	.079	0	0	0
24	++++++	.000	.268+02	.000	.000	.000	.000	.084	0	0	0
25	++++++	.000	.264+02	.000	.000	.000	.000	.089	0	0	0
26	++++++	.000	.457+01	.000	.000	.000	.000	.094	0	0	0

NOTE--

FLUX VALUES FLAGGED (++++++) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICOMP

TOTAL ELAPSED TIME IN PROBLEM = 415.691 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO TAPE, LAST RESTART RECORD WRITTEN = 168

MODEL=SAMPLE CONFIG=CASE5 STEP=10004 SAMPLE CASE 5 -- FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

INPUT VALUE	DESCRIPTION	USER OPTIONS	DEFAULT VALUE	VARIABLE NAME
	++++ BASIC CONTROL PARAMETERS ++++			
SHAD	SHADOWING OVERRIDE FLAG	SHAD,NOSH	SHAD	DINOSH
.250	PLANETARY ACCURACY FACTOR		0.25	DIACC
.100	SHADOWING ACCURACY FACTOR		0.10	DIACCS
10000	STEP NO. FOR PLANET-ORIENTED DATA		0	NSPFF
105.920	TRUE ANOMALY ANGLE, DEGREES		0.0	TRUEAN
.000	INITIAL TIME (AT PERIAPSIS)		0.0	TIMEST
	++++ BASIC ORBIT DATA ++++			
.000	LONGITUDE OF ASCENDING NODE, DEGREES		0.0	ALAN
.000	ARGUMENT OF PERIFOCUS, DEGREES		0.0	APER
.000	ORBIT INCLINATION, DEGREES		0.0	OINC
.60800+06	ORBIT ALTITUDE AT PERIAPSIS		0.0	HP
.60800+06	ORBIT ALTITUDE AT APOAPSIS		0.0	HA
.000	ORBIT ECCENTRICITY		0.0	ECC
.000	SUN RA ANGLE, DEGREES		0.0	SUNRA
.000	SUN DEC ANGLE,DEGREES,		0.0	SUNDEC
.000	REFERENCE STAR RA ANGLE, DEGREES		0.0	STRRA
.000	REFERENCE STAR DEC ANGLE, DEGREES		0.0	STRDEC
	++++ PLANET-ORIENTED, ORIENTATION DATA ++++			
300.000	ROTATION ABOUT VCS X-AXIS TO CCS		0.0	ROTX
270.000	ROTATION ABOUT VCS Y-AXIS TO CCS		0.0	ROTY
.000	ROTATION ABOUT VCS Z-AXIS TO CCS		0.0	ROTZ
1 2 3	ROTATION ORDER -- IROTX,IROTY,IROTZ		1 2 3	
.359+03	SUN LOOK ANGLE - CLOCK, DEGREES		0.0	SUNCL
.104+03	SUN LOOK ANGLE - CONE, DEGREES		0.0	SUNCO
.000	PLANET LOOK ANGLE - CLOCK, DEGREES		0.0	PLCL
.180+03	PLANET LOOK ANGLE - CONE, DEGREES		0.0	PLCO
	++++ SPIN DATA ++++			
.000	CLOCK ANGLE, DEGREES(ABOUT CCS Z-AXIS CCW=POSITIVE)		0.0	CLOCK
.000	CONE ANGLE, DEGREES		0.0	CONE
.000	ROTATION RATE- CCW POSITIVE		0.0	RATE
.000	TIME SPIN BEGINS		0.0	TIMSP

MODEL=SAMPLE CONFIG=CASE5 STEP=10004 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

++++++++ NSTEP NO = 10004

++++ COMPUTED OR INPUT ORBIT DATA ++++

VALUE	VARIABLE DESCRIPTION	***	VALUE	VARIABLE DESCRIPTION
60.000	SUN BETA ANGLE, DEGREES		.000	SUN CIGMA ANGLE, DEGREES
.000	STAR BETAS ANGLE, DEGREES		.000	STAR CIGMAS ANGLE, DEGREES

++++ PLANET --EARTH -- DATA ++++

VALUE	DESCRIPTION	NAME	***	VALUE	DESCRIPTION	NAME
.300	PLANET ALBEDO	PALB		.75073+02	PLANET DS EMISS POWER	WDS
.20900+08	PLANET RADIUS	PRAD		.75073+02	PLANET SS EMISS POWER	WSS
.14679+01	ORBIT PERIOD	PERIOD				
.41731+09	PLANET GRAV CONSTANT	GRAV		.42900+03	SOLAR CONSTANT AT PSD	SOL

MODEL=SAMPLE CONFIG=CASE5 STEP=10004 SAMPLE CASE 5 - FFCAL/RBCAL/OBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10004 TRUE ANOMALY = 105.91977 TIME = .43193
**** IN THE SHADE ****

NODE NUMBER	DIRECT FLUX(QDS)	UNSHADOWED FLUX	SHADOW FACTOR	COMPUTATION	CP TIME (SECONDS)	SURFACE ELEMENTS	SHADOWING SURFACES
1	.00000	.00000	.0000	******	.000	0	0
2	.00000	.00000	.0000	******	.028	0	0
3	.00000	.00000	.0000	******	.033	0	0
4	.00000	.00000	.0000	******	.037	0	0
11	.00000	.00000	.0000	******	.041	0	0
12	.00000	.00000	.0000	******	.045	0	0
13	.00000	.00000	.0000	******	.050	0	0
14	.00000	.00000	.0000	******	.055	0	0
200	.00000	.00000	.0000	******	.059	0	0
21	.00000	.00000	.0000	******	.065	0	0
22	.00000	.00000	.0000	******	.070	0	0
23	.00000	.00000	.0000	******	.074	0	0
24	.00000	.00000	.0000	******	.079	0	0
25	.00000	.00000	.0000	******	.084	0	0
26	.00000	.00000	.0000	******	.088	0	0

NOTE--

FLUX VALUES FLAGGED (******) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP, OR FORCED TO ZERO IN DICOM

TOTAL ELAPSED TIME IN PROBLEM = 416.216 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10004 SAMPLE CASE 5 - FFCAL/RBCAL/GSCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION LINK.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO. = 10004 TRUE ANOMALY = 105.91977 TIME = .43193
**** IN THE SHADE ****

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---UNSHADOWED FLUX--- ALBEDO	PLANETARY	--SHADOW FACTORS-- ALBEDO	PLAN	CP TIME (SECONDS)	--ELEMENTS-- PLAN	SURF	SHAD SURF
1	******	.000	.000	.000	.000	.000	.000	.001	0	0	0
2	******	.000	.000	.000	.000	.000	.000	.032	0	0	0
3	******	.000	.000	.000	.000	.000	.000	.038	0	0	0
4	******	.000	.000	.000	.000	000	.000	.043	0	0	0
11	******	.000	.000	.000	.000	.000	.000	.048	0	0	0
12	******	.000	.000	.000	.000	.000	.000	.052	0	0	0
13	******	.000	.000	.000	.000	.000	.000	.057	0	0	0
14	******	.000	.000	.000	.000	.000	.000	.064	0	0	0
200	******	.000	.144+02	.000	.000	.000	.000	.068	0	0	0
21	******	.000	.742+02	.000	.000	.000	.000	.073	0	0	0
22	******	.000	.269+02	.000	.000	.000	.000	.078	0	0	0
23	******	.000	.264+02	.000	.000	.000	.000	.084	0	0	0
24	******	.000	.268+02	.000	.000	.000	.000	.089	0	0	0
25	******	.000	.264+02	.000	.000	.000	.000	.097	0	0	0
26	******	.000	.457+01	.000	.000	.000	.000	.102	0	0	0

NOTE--

FLUX VALUES FLAGGED (******) MAY HAVE COME FROM RTI, THE FLUX DATA BLOCK, STUFFED FROM ANOTHER STEP OR FORCED TO ZERO IN DICOMP

TOTAL ELAPSED TIME IN PROBLEM = 416.333 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RCF TAPE, LAST RESTART RECORD WRITTEN = 181

MODEL=SAMPLE CONFIG=CASE5 STEP=10010 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 9 TRUE ANOMALY = .00000 TIME = .00000
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX (QDS)	DIRECT ABS. FLUX
1	.00000	.00000
2	.94028+02	.84625+02
3	.00000	.00000
4	.16512+03	.14861+03
11	.00000	.00000
12	.00000	.00000
13	.10055+02	.90492+01
14	.91734+02	.82561+02
200	.00000	.00000
21	.00000	.00000
22	.10725+03	.21450+02
23	.18576+03	.37152+02
24	.00000	.00000
25	.00000	.00000
26	.18687+03	.37374+02

TOTAL ELAPSED TIME IN PROBLEM = 416.676 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10010 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QDCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 8 TRUE ANOMALY = .00000 TIME = .00000
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---DIRECT ABS. FLUX--- ALBEDO	PLANETARY
1		.000	.000	.000	.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000
11		.000	.000	.000	.000
12		.000	.000	.000	.000
13		.000	.000	.000	.000
14		.000	.000	.000	.000
200		.215+02	.144+02	.215+01	.144+01
21		.110+03	.742+02	.220+02	.868+02
22		.402+02	.268+02	.805+01	.241+02
23		.400+02	.264+02	.800+01	.238+02
24		.391+02	.268+02	.783+01	.241+02
25		.382+02	.264+02	.765+01	.238+02
26		.859+01	.457+01	.132+01	.411+01

TOTAL ELAPSED TIME IN PROBLEM = 418.757 SECONDS
S,A,P FLUXES HAVE BEEN WRITTEN TO RSO. LAST RESTART RECORD WRITTEN = 184

MODEL=SAMPLE CONFIG=CASE5 STEP=10010 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10010	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10010	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10010	CURRENT STEP NO	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

MODEL=SAMPLE CONFIG=CASE5 STEP=10010 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEATING RATES FOR ORBIT POINT = 10010 TRUE ANOMALY = .0000 TIME = .0000
UNITS ARE ENERGY PER UNIT TIME

**** IN THE SUN ****

NODE	SOLAR		ALBEDO		PLANETARY		TOTAL HEAT RATES	
	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL
1	.00000	.59530+01	.00000	.40089+00	.00000	.26715+00	.00000	.66210+01
2	.84625+02	.88420+02	.00000	.28120+00	.00000	.18739+00	.84525+02	.88897+02
3	.00000	.54758+01	.00000	.14461+00	.00000	.96367-01	.00000	.57160+01
4	.14861+03	.15002+03	.00000	.34089+00	.00000	.22717+00	.14861+03	.15139+03
11	.00000	.34174+01	.00000	.40089+00	.00000	.26715+00	.00000	.40854+01
12	.00000	.33593+01	.00000	.28120+00	.00000	.18739+00	.00000	.38279+01
13	.90492+01	.11836+02	.00000	.14461+00	.00000	.96367-01	.90492+01	.12127+02
14	.82561+02	.83356+02	.00000	.34089+00	.00000	.22717+00	.82561+02	.83924+02
200	.00000	.59547+00	.43066+01	.43126+01	.28712+01	.28739+01	.71753+01	.77819+01
21	.00000	.00000	.45564+02	.45574+02	.13765+03	.13765+03	.18302+03	.18302+03
22	.44196+02	.44196+02	.16542+02	.16562+02	.49744+02	.49744+02	.11052+03	.11052+03
23	.38653+02	.38653+02	.83275+01	.83275+01	.24746+02	.24746+02	.71727+02	.71727+02
24	.00000	.00000	.16131+02	.16131+02	.49668+02	.49668+02	.65799+02	.65799+02
25	.00000	.00000	.79547+01	.79547+01	.24746+02	.24746+02	.32701+02	.32701+02
26	.77005+02	.77005+02	.27165+01	.27165+01	.84736+01	.84736+01	.88195+02	.88195+02

TOTAL ELAPSED TIME IN PROBLEM = 417.183 SECONDS

ABSORBED Q STORED IN STEP 10010

TOTAL TIME TO COMPUTE ABSORBED Q .37

MODEL=SAMPLE CONFIG=CASE5 STEP=10011 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QQCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 10 TRUE ANOMALY = 90.00000 TIME = .36701
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX (QDS)	DIRECT ABS. FLUX
1	.00000	.00000
2	.00000	.00000
3	.00000	.00000
4	.22877+03	.20589+03
11	.00000	.00000
12	.00000	.00000
13	.00000	.00000
14	.22877+03	.20589+03
200	.30335+03	.30335+02
21	.00000	.00000
22	.42900+03	.85800+02
23	.00000	.00000
24	.00000	.00000
25	.00000	.00000
26	.00000	.00000

TOTAL ELAPSED TIME IN PROBLEM = 417.856 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10011 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/OROGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 10 TRUE ANOMALY = 90.00000 TIME = .36701
++++ IN THE SUN ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---DIRECT ABS. FLUX -- ALBEDO	PLANETARY
1		.000	.000	.000	.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000
11		.000	.000	.000	.000
12		.000	.000	.000	.000
13		.000	.000	.000	.000
14		.000	.000	.000	.000
200		.120+01	.144+02	.120+00	.144+01
21		.143+01	.742+02	.286+00	.668+02
22		.206+01	.269+02	.412+00	.241+02
23		.638+00	.264+02	.128+00	.230+02
24		.000	.268+02	.000	.241+02
25		.634+00	.264+02	.127+00	.230+02
26		.000	.457+01	.000	.411+01

TOTAL ELAPSED TIME IN PROBLEM = 417.936 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO R00. LAST RESTART RECORD WRITTEN = 193

MODEL=SAMPLE CONFIG=CASE5 STEP=10011 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/OMGEN/DPCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10011	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10011	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10011	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

MODEL=SAMPLE CONFIG=CASE5 STEP=10011 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/ORCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEATING RATES FOR ORBIT POINT = 10011 TRUE ANOMALY = 90.0000 TIME = .3670
UNITS ARE ENERGY PER UNIT TIME

♦♦♦♦ IN THE SUN ♦♦♦♦

NODE	SOLAR		ALBEDO		PLANETARY		TOTAL HEAT RATES	
	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL
1	.00000	.11533+02	.00000	.22339-01	.00000	.26715+00	.00000	.11822+02
2	.00000	.93697+01	.00000	.15869-01	.00000	.18739+00	.00000	.95727+01
3	.00000	.74731+01	.00000	.80580-02	.00000	.96367-01	.00000	.75775+01
4	.20589+03	.21117+03	.00000	.18995-01	.00000	.22717+00	.20589+03	.21142+03
11	.00000	.11533+02	.00000	.22339-01	.00000	.26715+00	.00000	.11822+02
12	.00000	.93697+01	.00000	.15869-01	.00000	.18739+00	.00000	.95727+01
13	.00000	.74731+01	.00000	.80579-02	.00000	.96367-01	.00000	.75775+01
14	.20589+03	.21117+03	.00000	.18995-01	.00000	.22717+00	.20589+03	.21142+03
200	.60670+02	.61530+02	.24009+00	.24031+00	.28712+01	.28739+01	.64781+02	.64845+02
21	.00000	.00000	.59914+00	.59914+00	.13765+03	.13765+03	.13824+03	.13824+03
22	.17678+03	.17678+03	.84940+00	.84940+00	.49744+02	.49744+02	.22737+03	.22737+03
23	.00000	.00000	.13273+00	.13273+00	.24746+02	.24746+02	.24879+02	.24879+02
24	.00000	.00000	.00000	.00000	.49660+02	.49660+02	.49660+02	.49660+02
25	.00000	.00000	.13197+00	.13197+00	.24746+02	.24746+02	.24878+02	.24878+02
26	.00000	.00000	.00000	.00000	.84736+01	.84736+01	.84736+01	.84736+01

TOTAL ELAPSED TIME IN PROBLEM = 418.357 SECONDS

ABSORBED Q STORED IN STEP 10011

TOTAL TIME TO COMPUTE ABSORBED Q .38

MODEL=SAMPLE CONFIG=CASE5 STEP=10012 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 11 TRUE ANOMALY = 180.00000 TIME = .73402
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX (QDS)	DIRECT ABS. FLUX
1	.00000	.00000
2	.00000	.00000
3	.00000	.00000
4	.00000	.00000
11	.00000	.00000
12	.00000	.00000
13	.00000	.00000
14	.00000	.00000
200	.00000	.00000
21	.00000	.00000
22	.00000	.00000
23	.00000	.00000
24	.00000	.00000
25	.00000	.00000
26	.00000	.00000

TOTAL ELAPSED TIME IN PROBLEM = 419.134 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10012 SAMPLE CASE 5 - FFCAL/RDCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QDCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 11 TRUE ANOMALY = 180.00000 TIME = .73402
++++ IN THE SHADE ++++

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---DIRECT ABS. FLUX--- ALBEDO	PLANETARY
1		.000	.000	.000	.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000
11		.000	.000	.000	.000
12		.000	.000	.000	.000
13		.000	.000	.000	.000
14		.000	.000	.000	.000
200		.000	.144+02	.000	.144+01
21		.000	.742+02	.000	.668+02
22		.000	.268+02	.000	.241+02
23		.000	.264+02	.000	.238+02
24		.000	.268+02	.000	.241+02
25		.000	.264+02	.000	.238+02
26		.000	.457+01	.000	.411+01

TOTAL ELAPSED TIME IN PROBLEM = 419.216 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO. LAST RESTART RECORD WRITTEN = 202

MODEL=SAMPLE CONFIG=CASE5 STEP=10012 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10012	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10012	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10012	CURRENT STEP NO	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

MODEL=SAMPLE CONFIG=CASE5 STEP=10012 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEATING RATES FOR ORBIT POINT = 10012 TRUE ANOMALY = 180.0000 TIME = .7340
UNITS ARE ENERGY PER UNIT TIME

◇◇◇◇ IN THE SHADE ◇◇◇◇

NODE	SOLAR		ALBEDO		PLANETARY		TOTAL HEAT RATES	
	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL
1	.00000	.00000	.00000	.00000	.00000	.26715+00	.00000	.26715+00
2	.00000	.00000	.00000	.00000	.00000	.18739+00	.00000	.18739+00
3	.00000	.00000	.00000	.00000	.00000	.96367-01	.00000	.96367-01
4	.00000	.00000	.00000	.00000	.00000	.22717+00	.00000	.22717+00
11	.00000	.00000	.00000	.00000	.00000	.26715+00	.00000	.26715+00
12	.00000	.00000	.00000	.00000	.00000	.18739+00	.00000	.18739+00
13	.00000	.00000	.00000	.00000	.00000	.96367-01	.00000	.96367-01
14	.00000	.00000	.00000	.00000	.00000	.22717+00	.00000	.22717+00
200	.00000	.00000	.00000	.00000	.28712+01	.28739+01	.28712+01	.28739+01
21	.00000	.00000	.00000	.00000	.13765+03	.13765+03	.13765+03	.13765+03
22	.00000	.00000	.00000	.00000	.49744+02	.49744+02	.49744+02	.49744+02
23	.00000	.00000	.00000	.00000	.24746+02	.24746+02	.24746+02	.24746+02
24	.00000	.00000	.00000	.00000	.49668+02	.49668+02	.49668+02	.49668+02
25	.00000	.00000	.00000	.00000	.24746+02	.24746+02	.24746+02	.24746+02
26	.00000	.00000	.00000	.00000	.84736+01	.84736+01	.84736+01	.84736+01

TOTAL ELAPSED TIME IN PROBLEM = 419.666 SECONDS

ABSORBED Q STORED IN STEP 10012

TOTAL TIME TO COMPUTE ABSORBED Q .40

MODEL=SAMPLE CONFIG=CASE5 STEP=10013 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/ORCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 12 TRUE ANOMALY = 105.71977 TIME = .43111
++++ IN THE SUN ++++

NODE NUMBER	DIRECT FLUX (QDS)	DIRECT ABS. FLUX
1	.40259+02	.36233+02
2	.37050+01	.33345+01
3	.00000	.00000
4	.18529+03	.16676+03
11	.40259+02	.36233+02
12	.00000	.00000
13	.00000	.00000
14	.18529+03	.16676+03
200	.24401+03	.24401+02
21	.10066+03	.20132+02
22	.41696+03	.83393+02
23	.69478+01	.13896+01
24	.00000	.00000
25	.00000	.00000
26	.00000	.00000

TOTAL ELAPSED TIME IN PROBLEM = 420.637 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10013 SAMPLE CASE 5 - FFCAL/RBCAL/QBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 12 TRUE ANOMALY = 105.71977 TIME = .43111
**** IN THE SUN ****

NODE NUMBER	COMPUT	---DIRECT INCID FLUX--- ALBEDO	PLANETARY	---DIRECT ABS. FLUX--- ALBEDO	PLANETARY
1		.000	.000	.000	.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000
11		.000	.000	.000	.000
12		.000	.000	.000	.000
13		.000	.000	.000	.000
14		.000	.000	.000	.000
200		.000	.144+02	.000	.144+01
21		.000	.742+02	.000	.668+02
22		.000	.268+02	.000	.241+02
23		.000	.264+02	.000	.238+02
24		.000	.268+02	.000	.241+02
25		.000	.264+02	.000	.238+02
26		.000	.457+01	.000	.411+01

TOTAL ELAPSED TIME IN PROBLEM = 420.706 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO, LAST RESTART RECORD WRITTEN = 211

MODEL=SAMPLE CONFIG=CASE5 STEP=10013 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10013	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10013	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10013	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

MODEL=SAMPLE CONFIG=CASE5 STEP=10013 SAMPLE CASE 5 - FFCAL/RBCAL/GDCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEATING RATES FOR ORBIT POINT = 10013 TRUE ANOMALY = 105.7198 TIME = .4311
UNITS ARE ENERGY PER UNIT TIME

++++ IN THE SUN ++++

NODE	SOLAR		ALBEDO		PLANETARY		TOTAL HEAT RATES	
	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL
1	.36233+02	.46055+02	.00000	.00000	.00000	.26715+00	.36233+02	.46322+02
2	.33345+01	.11970+02	.00000	.00000	.00000	.18739+00	.33345+01	.12157+02
3	.00000	.72246+01	.00000	.00000	.00000	.96367-01	.00000	.73210+01
4	.16676+03	.17212+03	.00000	.00000	.00000	.22717+00	.16676+03	.17235+03
11	.36233+02	.45996+02	.00000	.00000	.00000	.26715+00	.36233+02	.46264+02
12	.00000	.86579+01	.00000	.00000	.00000	.18739+00	.00000	.86453+01
13	.00000	.71652+01	.00000	.00000	.00000	.96367-01	.00000	.72615+01
14	.16676+03	.17206+03	.00000	.00000	.00000	.22717+00	.16676+03	.17229+03
200	.48802+02	.49671+02	.00000	.00000	.28712+01	.28739+01	.51673+02	.52545+02
21	.41479+02	.41479+02	.00000	.00000	.13765+03	.13765+03	.17913+03	.17913+03
22	.17182+03	.17182+03	.00000	.00000	.49744+02	.49744+02	.22157+03	.22157+03
23	.14457+01	.14457+01	.00000	.00000	.24746+02	.24746+02	.26192+02	.26192+02
24	.00000	.00000	.00000	.00000	.49668+02	.49668+02	.49668+02	.49668+02
25	.00000	.00000	.00000	.00000	.24746+02	.24746+02	.24746+02	.24746+02
26	.00000	.00000	.00000	.00000	.84736+01	.84736+01	.84736+01	.84736+01

TOTAL ELAPSED TIME IN PROBLEM = 421.143 SECONDS

ABSORBED Q STOPED IN STEP 10013

TOTAL TIME TO COMPUTE ABSORBED Q .39

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/ORCAL/AQCAL/QQCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

SOLAR DIRECT INCIDENT FLUX FOR STEP NO 13 TRUE ANOMALY = 105.91977 TIME = .43193
++++ IN THE SHADE ++++

NODE NUMBER	DIRECT FLUX (BDS)	DIRECT ABS. FLUX
1	.40758+02	.36683+02
2	.37993+01	.34194+01
3	.00000	.00000
4	.18515+03	.16664+03
11	.40758+02	.36682+02
12	.00000	.00000
13	.00000	.00000
14	.18515+03	.16664+03
200	.00000	.00000
21	.00000	.00000
22	.00000	.00000
23	.00000	.00000
24	.00000	.00000
25	.00000	.00000
26	.00000	.00000

TOTAL ELAPSED TIME IN PROBLEM = 422.062 SECONDS

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
DIRECT IRRADIATION CALCULATION WITH SPECULAR SURFACES.

ALBEDO AND PLANETARY DIRECT INCIDENT FLUXES FOR STEP NO 13 TRUE ANOMALY = 105.91977 TIME = .43193
♦♦♦♦ IN THE SHADE ♦♦♦♦

NODE NUMBER	COMPUT	---DIRECT INCID. FLUX-- ALBEDO	PLANETARY	---DIRECT ABS. FLUX--- ALBEDO	PLANETARY
1		.000	.000	.000	.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000
11		.000	.000	.000	.000
12		.000	.000	.000	.000
13		.000	.000	.000	.000
14		.000	.000	.000	.000
200		.000	.144+02	.000	.144+01
21		.000	.742+02	.000	.668+02
22		.000	.268+02	.000	.241+02
23		.000	.264+02	.000	.238+02
24		.000	.268+02	.000	.241+02
25		.000	.264+02	.000	.238+02
26		.000	.457+01	.000	.411+01

TOTAL ELAPSED TIME IN PROBLEM = 422.137 SECONDS
S.A.P FLUXES HAVE BEEN WRITTEN TO RSO, LAST RESTART RECORD WRITTEN = 220

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEAT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IAQSDS	10014	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR SOLAR DI	N/A
IAQSDA	10014	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR ALBEDO DI	N/A
IAQSDP	10014	CURRENT STEP NO.	STEP NUMBER REFERENCE FOR PLANETARY DI	N/A

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q COMPUTATION LINK.

ABSORBED HEATING RATES FOR ORBIT POINT = 10014 TRUE ANOMALY = 105.9198 TIME = .4319
UNITS ARE ENERGY PER UNIT TIME

**** IN THE SHADE ****

NODE	SOLAR		ALBEDO		PLANETARY		TOTAL HEAT RATES	
	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL	DIRECT	TOTAL
1	.36683+02	.41968+02	.00000	.00000	.00000	.26715+00	.36683+02	.42235+02
2	.34194+01	.88797+01	.00000	.00000	.00000	.18739+00	.34194+01	.90671+01
3	.00000	.55091+01	.00000	.00000	.00000	.96367-01	.00000	.56955+01
4	.16664+03	.16815+03	.00000	.00000	.00000	.22717+00	.16664+03	.16838+03
11	.36682+02	.41907+02	.00000	.00000	.00000	.26715+00	.36682+02	.42174+02
12	.00000	.54836+01	.00000	.00000	.00000	.18739+00	.00000	.56710+01
13	.00000	.55381+01	.00000	.00000	.00000	.96357-01	.00000	.56345+01
14	.16664+03	.16809+03	.00000	.00000	.00000	.22717+00	.16664+03	.16832+03
200	.00000	.82513+00	.00000	.00000	.28712+01	.28739+01	.28712+01	.36990+01
21	.00000	.00000	.00000	.00000	.13765+03	.13765+03	.13765+03	.13765+03
22	.00000	.00000	.00000	.00000	.49744+02	.49744+02	.49744+02	.49744+02
23	.00000	.00000	.00000	.00000	.24746+02	.24746+02	.24746+02	.24746+02
24	.00000	.00000	.00000	.00000	.49668+02	.49668+02	.49668+02	.49668+02
25	.00000	.00000	.00000	.00000	.24746+02	.24746+02	.24746+02	.24746+02
26	.00000	.00000	.00000	.00000	.84736+01	.84736+01	.84736+01	.84736+01

TOTAL ELAPSED TIME IN PROBLEM = 422.592 SECONDS

ABSORBED Q STORED IN STEP 10014

TOTAL TIME TO COMPUTE ABSORBED Q .41

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED Q OUT

VARIABLE NAME	CURRENT VALUE	DEFAULT	DEFINITION	OPTIONS
IQOTME	1	1	TIME ARRAY ID NUMBER FLUX TABLES START AT IQOTME + 1	N/A
QOTAPE	NO	2HNO	PARAMETER TO OUTPUT TO BCD TAPE	(4HTAPE,2HNO)
QOPNCH	NO	2HNO	PUNCH/NO PUNCH PARAMETER FOR OUTPUT	(3HPUN,2HNO)
QOAMPF	1.0000	1.0	AREA MULTIPLYING FACTOR	N/A
QOFMPF	1.0000	1.0	FLUX MULTIPLYING FACTOR	N/A
QOTMPF	1.0000	1.0	TIME MULTIPLYING FACTOR	N/A
QOTYPE	BOTH	NONE	PARAMETER TO DETERMINE TYPE OF OUTPUT	(3HTAB,2HAV,4HBOTH)
IQOARY	ALL	NONE	STEP NO. ARRAY DIRECTIVE	(3HALL,ARRAY NAME)

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED HEAT RATE TABLES PUNCHED

Q = INPUT * RMPF WHERE RMPF = .10000+01
TIME = INPUT * TMPF WHERE TMPF = .10000+01
AREA IS ON SUBROUTINE CALL CARDS

```
    1$ TIME ARRAY
   .000    .    .367+00,   .431+00,   .432+00,   .734+00
END$
    2$  HEAT RATE ARRAY
   .662+01,   .118+02,   .463+02,   .422+02,   .267+00
END$
    3$  HEAT RATE ARRAY
   .889+02,   .957+01,   .122+02,   .907+01,   .187+00
END$
    4$  HEAT RATE ARRAY
   .572+01,   .758+01,   .732+01,   .570+01,   .964-01
END$
    5$  HEAT RATE ARRAY
   .151+03,   .211+03,   .172+03,   .168+03,   .227+00
END$
    6$  HEAT RATE ARRAY
   .409+01,   .118+02,   .463+02,   .422+02,   .267+00
END$
    7$  HEAT RATE ARRAY
   .383+01,   .957+01,   .895+01,   .567+01,   .187+00
END$
    8$  HEAT RATE ARRAY
   .121+02,   .758+01,   .726+01,   .563+01,   .964-01
END$
    9$  HEAT RATE ARRAY
   .839+02,   .211+03,   .172+03,   .168+03,   .227+00
END$
   10$  HEAT RATE ARRAY
   .778+01,   .646+02,   .525+02,   .370+01,   .287+01
END$
   11$  HEAT RATE ARRAY
   .183+03,   .138+03,    179+03,   .138+03,   .138+03
END$
   12$  HEAT RATE ARRAY
   .111+03,   .227+03,   .222+03,   .497+02,   .497+02
END$
   13$  HEAT RATE ARRAY
   .717+02,   .249+02,   .262+02,   .247+02,   .247+02
END$
```

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q OUTPUT COMPUTATION LINK.

ABSORBED HEAT RATE TABLES PUNCHED

Q = INPUT * RMPF WHERE RMPF = .10000+01
TIME = INPUT * TMPF WHERE TMPF = .10000+01
AREA 'S ON SUBROUTINE CALL CARDS

```
   14$  HEAT RATE ARRAY
   .658+02,   .497+02,   .497+02,   .497+02,   .497+02
END$
   15$  HEAT RATE ARRAY
   .327+02,   .249+02,   .247+02,   .247+02,   .247+02
END$
   16$  HEAT RATE ARRAY
   .882+02,   .847+01,   .847+01,   .847+01,   .847+01
END$
```

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/GBCAL/RKCAL/ORBGEN/ORCAL/AQCAL/QOCAL
ABSORBED Q OUTPUT COMPUTATION LINK.

DA1INC SUBROUTINE CALL CARDS

```
                              AREA = INPUT (UNITS) * AMPF  WHERE AMPF =     .10000+01
DA1INC(1.46792175E 0,TIMEM,A1    .A2   .1.00000000E 0,Q1    )$
DA1INC(1.46792175E 0,TIMEM,A1    .A3   .1.00000000E 0,Q2    )$
DA1INC(1.46792175E 0,TIMEM,A1    .A4   .1.00000000E 0,Q3    )$
DA1INC(1.46792175E 0,TIMEM,A1    .A5   .1.00000000E 0,Q4    )$
DA1INC(1.46792175E 0,TIMEM,A1    .A6   .1.00000000E 0,Q11   )$
DA1INC(1.46792175E 0,TIMEM,A1    .A7   .1.00000000E 0,Q12   )$
DA1INC(1.46792175E 0,TIMEM,A1    .A8   .1.00000000E 0,Q13   )$
DA1INC(1.46792175E 0,TIMEM,A1    .A9   .1.00000000E 0,Q14   )$
DA1INC(1.46792175E 0,TIMEM,A1    .A10  .1.00000000E 0,Q200  )$
DA1INC(1.46792175E 0,TIMEM,A1    .A11  .1.00000000E 0,Q21   )$
DA1INC(1.46792175E 0,TIMEM,A1    .A12  .1.00000000E 0,Q22   )$
DA1INC(1.46792175E 0,TIMEM,A1    .A13  .1.00000000E 0,Q23   )$
DA1INC(1.46792175E 0,TIMEM,A1    .A14  .1.00000000E 0,Q24   )$
DA1INC(1.46792175E 0,TIMEM,A1    .A15  .1.00000000E 0,Q25   )$
DA1INC(1.46792175E 0,TIMEM,A1    .A16  .1.00000000E 0,Q26   )$
```

MODEL=SAMPLE CONFIG=CASE5 STEP=10014 SAMPLE CASE 5 - FFCAL/RBCAL/OBCAL/RKCAL/ORBGEN/DRCAL/AQCAL/QOCAL
ABSORBED Q OUTPUT COMPUTATION LINK.

AVERAGE ORBITAL HEATING RATE AND AREA CARDS PUNCHED

VALUES ARE RATE = INPUT (UNITS) * RMPF WHERE RMPF = .10000+01
VALUES ARE AREA = INPUT (UNITS) * AMPF WHERE AMPF = .10000+01

Q1	=1.59449475E	1
Q2	=2.74823542E	1
Q3	=5.17319250E	0
Q4	=1.42343797E	2
Q11	=1.52960157E	1
Q12	=5.36798030E	0
Q13	=6.76045656E	0
Q14	=1.25462652E	2
Q200	=2.46076262E	1
Q21	=1.51001135E	2
Q22	=1.24700516E	2
Q23	=3.65944627E	1
Q24	=5.37007242E	1
Q25	=2.67737916E	1
Q26	=2.84039971E	1

TOTAL TIME TO COMPUTE ABSORBED Q OUT .52

NORMAL TERMINATION BY PROCESSOR

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